

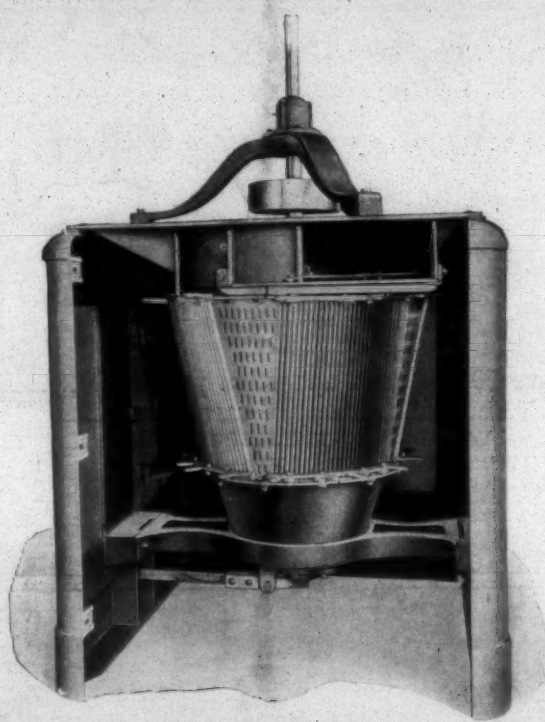
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SOUTHERN TEXTILE BULLETIN

VOL. XXIV.

CHARLOTTE, N. C., THURSDAY, OCTOBER 26, 1922.

NUMBER 9



(Patent Applied For)

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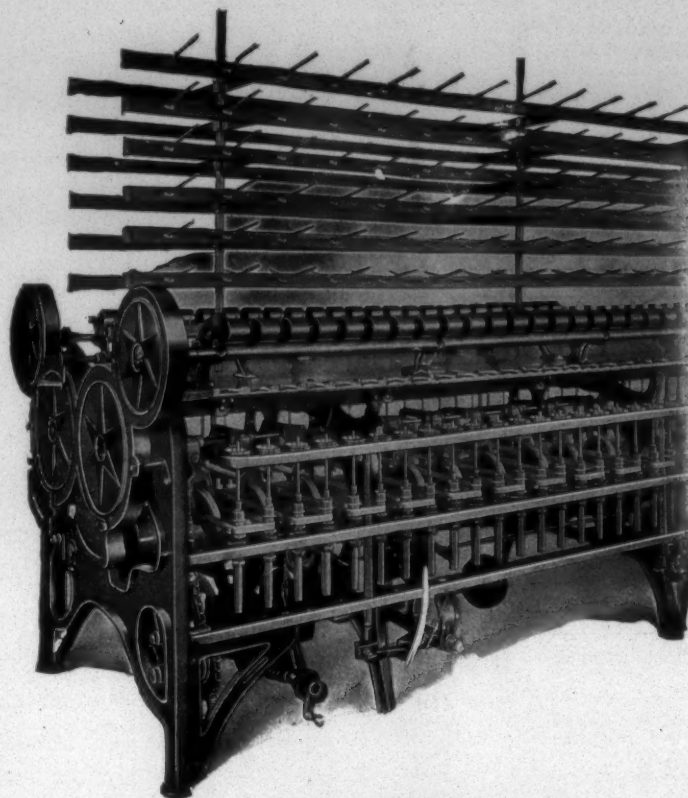
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SOUTHERN TEXTILE BULLETIN

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VOL. XXIV.

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NUMBER 9

Opening and Lapping---and Better Goods

(L. L. Brown, before Southern Textile Association.)

Mr. Chairman, Members of the Southern Textile Association, Ladies and Gentlemen:

The subject assigned to me by the Program Committee, "The Relation of the Opening Room and Lappers to Better Goods," is a subject that up to a few years ago has been sadly neglected by most of us. The relation of the Opening Room and Lappers to the finished goods is most vital.

I consider the Picker Room the foundation of the mill for it is there that our work begins. If the lap comes to the Cards even and the stock well mixed and clean the Card can function as a card-should and not play the dual role of both the Picker and Card.

We have discussed at length in these meetings before the subject of ageing cotton. It is the consensus of opinion that for cotton to be properly aged it should be run through some good opening machine that has air suction and the cotton thus left in a fluffy condition for several days. There is no doubt that cotton thus conditioned will regain its natural twist and moisture and is much easier cleaned and spun. But it is for the mills on the finer counts that this method of conditioning is possible. The mills on the coarser counts are handicapped for the lack of room. Therefore, for the most of us it is necessary to lay aside the idea of ageing and try to get the cotton from the bale to the finished lap in the quickest possible time. Common sense tells us that the more bales we can lay down at the same time the better the mix, and I believe that most mills can put down a days run at a time. When this is done and each bale gradually used the mix won't be far wrong. But it is just as important to see that your Outside man gives the Opening Room the same grades of cotton day after day.

Our system on this is as follows: The Picker Room foreman has a schedule showing him just how many bales of the different grades he is to use in his mixture. At the end of the day he makes out a list showing first how many bales of the different grades he has on hand and second, how many bales of the different grades he needs for the next day, and gives this list to the Outside man. This enables the Outside man to keep the Opening Room

properly stocked, and not all good cotton one day and bad the next. If you run several different grades of cotton, say from good middling down to low middling, and all kinds of tinges too, and haven't a good system in your Opening Room, go stand in front of your warpers and see how many different colors of yarn you are making.

The next thing after the proper mixture is to clean the cotton and put it in lap form with as little damage to the fiber as possible. This in a great many mills is being done by the aid of Vertical Openers, slower beater speeds, fewer processes and ball-bearing equipped aprons, and ever motions, etc.

One thing that we all are interested in is to get the cotton the cleanest possible with the least damage to the fibre. We know that the more picker processes we use and the more licks we give the cotton the cleaner it will be, but we also know that in so doing that we injure the fibre.

The Vertical Opener is today, I think, the greatest aid we have in opening of cotton and also it is very efficient in cleaning the cotton with practically no damage to the fibres. Single Vertical Openers have been in use for several years, but only recently have they been installed in tandem, that is, two or three in a line and the cotton passing through the complete set. It is surprising how much dirt, leaf and short fibres these machines will take out. The Vertical Opener when first built with the stationary perforated screen was designed primarily for the opening of the cotton, the cleaning was secondary, but today the Vertical Opener with an adjustable grid bar plays as great a part in the cleaning of the cotton as in the opening.

Three months ago at our No. 3 mill, which is on Print Cloths, we installed three Vertical Openers in tandem, and the results have been very gratifying. We have found the following advantages:

1. Cotton better opened.
2. Can use a slightly lower grade of cotton and obtain the same quality of work.
3. Less dust in Card Room.
4. Cards doing better work for they have less work to do.
5. Card Room Sweeps reduced 11 per cent.
6. Spinning Room Sweeps reduced 31 per cent.
7. Spinning Room Scavenger roll

waste reduced 10 per cent. brought up from 56 to 58.

8. Breaking weight on 29s warp We have found the following disadvantage:

Have had to change men in the Opener Room three times in two months. These men weren't fired but quit, reason for quitting—too much "durn dust" cleaning out Vertical Openers, but we have now secured a gas mask and have obviated that trouble.

With our three Vertical Openers in tandem we have been very particular and thorough in our tests and have found the following:

With the adjustable grid one-half open we took out in August 1.67 per cent waste and in September with the same setting 1.77 per cent waste. We are now running with the grids entirely open, but haven't the data at the present time for an entire month. However, I will give below some tests of individual bales with the grids wide open.

Grids one-half open strict middling cotton shows the following waste extracted: 1st V. O. 1.03 per cent; 2nd V. O. 0.44 per cent; 3rd V. O. 0.32 per cent, total 1.79 per cent. Grids fully open strict middling cotton shows the following: 1st V. O. 1.47 per cent; 2nd V. O. 0.79 per cent; 3rd V. O. 0.40 per cent, total 2.66 per cent. We have extracted of low middling that was very trashy a total of 4.25 per cent waste.

Below I give the results from another mill data was taken over a period of a week's run, with strict middling cotton 1 1-16" staple;

1st V. O. 0.89 per cent; 2nd V. O. 0.74 per cent; 3rd V. O. 0.59 per cent, total 2.22 per cent.

I have with me several samples showing the cotton before and after passing through the Vertical Opener, also samples showing the character of waste from each Vertical Opener.

You will note that the sample from the second and third machine looks almost as trashy as that from the first, but by weight it is a good deal less, this being due to the fact that the sand comes out in the first machine.

I would like to quote part of a letter from a mill making hosiery yarn that has revamped their Picker room. "After putting in Vertical Openers, Buckley cylinders, evener arrangement, feed regulators and cutting out our intermediate process of picking, we found it necessary to take out twist on stubbers, inter-

mediates, speeders and spinning frames. As you know, in hosiery yarns a soft yarn without kinks is desired, and only sufficient breaking strength is required to keep from breaking down in winding or knitting. Before we changed the twist our yarn broke on an average of 10 per cent higher than before. When we completed the above changes we had twelve different mixes of cotton and cotton mixed with waste, and it was necessary to take out the twist on all processes and on all mixes so there is hardly any chance that anything other than the change made in the picking could have caused the increased strength."

The lack of time, as we are only allowed ten minutes, prevents me from going further into details of this important subject of Opening and Picking, but I will be glad to answer any questions or give any information that I have.

I believe that it is through these discussions, born of the Southern Textile Association, that we have made such rapid strides in all branches of our industry.

Increased Auto Tire Consumption.

Akron, Ohio.—The Miller Rubber Company, among the most conservative companies in the Akron district, estimates that the tire sales for automobiles and trucks this year will be in the neighborhood of at least 36,000,000, as compared with previous estimates, which have been generally accepted, of 33,000,000.

If this estimate proves to be correct, it is not unlikely that the unofficial estimates for the coming year at which consumption in the United States for 1923 was given at 40,000,000 and the world at 50,000,000, will be too low.

On the basis of new cars placed into operation during the present year, it was estimated that at least 7,000,000 more tires would be required in 1923 than in 1922, and this would place the new estimate at between 43,000,000 and 45,000,000 tires.

Figures heretofore given out by the Miller Rubber company in the way of estimates or predictions have always been conservative, and for that reason the new figures given out by the company are looked upon as being authoritative.

Miller's estimate early in the year was most conservative, when tire consumption during the year was placed at between 26,000,000 and 28,000,000 tires.

Relation of Cloth Room to Better Goods

(H. W. Mosely, before Southern Textile Association.)

The Cloth Room is to the Mill as Castor Oil is to a man, it is considered an evil thing just tolerated because it has to be called upon in time of trouble or sickness, when a man becomes bilious from wrong living by over eating he will call on some Doctor to prescribe a remedy, and if he is a good Doctor he will advise a dose of Castor Oil, just so with the mill when it becomes bilious from production and good times, when the market will for a time absorb any cloth that it makes, and allows its vitality to run down, and when the cloth room presents the monthly report with an unusual amount of bad cloth and prescribed a dose of "Quality" as a remedy, the mill has the same feeling towards the cloth room as a man has to the doctor when he is told to take a teacup full of castor oil.

The cloth room is not an evil as often considered by the other departments, but it is a safety valve, that must pop off at times and tell the mill they have reached the danger point in their efforts to make a record in pounds, the average worker in the mill is more concerned with the amount that he or she makes than with the quality, therefore, the cloth room is for the purpose of showing to the mill that quantity and quality are not equal.

I feel like sometime asking the question "Why the Cloth Room," it is not listed in the cost sheet under labor cost, and I suppose for that reason it is forgotten when the wage scale is being made and is adjusted, the cloth room is then given what is left of the amount allowed for labor cost in the mill. I think the man or woman who in the days work handles thousands of dollars worth of cloth, inspects and grades and puts in a condition for the buyer, is worth as much to the mill as one who weaves a few hundred yards of cloth a day, if the inspectors and graders are put on a basis of the quill cleaners and waste haulers, they will naturally have the same interest in their work.

Each department in the mill has the one following to correct its imperfections, until the cloth room is reached, it has the final look at the cloth, and as the water that has passed through the water wheel is lost forever, an imperfection that escapes the vision of the inspector or grader is gone, and will result in trouble for the cloth room when it reaches the buyer.

The cloth room acts as a buffer between the mill and the buyer, if for some reason the work in the cloth room is indifferent and allows imperfections to pass on to the buyer, thereby showing in the monthly report a small percentage of seconds, the mill is satisfied that every part of the mill is running smoothly, as it takes time for the cloth to get into the hands of the buyer after being shipped, you do not hear it for some time, and when the cloth is inspected by the finisher, and he

finds it below standard, a barrage is started at once from the front in the form of letters by the yard to the office, and at once the office opens up, and the cloth room runs up its flag calling for "Quality." You will ask why wait until then to call for quality, for this reason, the people in the cloth room are human as well as those in the other departments, and are going to have a standard of work in their department just so good as the other departments, in this respect, the best that is produced will be classed as first, and the mill will make the cloth just as bad as the cloth room will allow, so the purpose of the cloth room should be to create a standard that will meet the demands of the buyer, and insist upon the mill making a cloth that will satisfy the buyer and bring to the mill repeat orders. Repeat orders are what make profits for the mill, especially if the mill is making specialties, standard goods of course can often be disposed of to other buyers.

So you will see that it is a moral question that enters into the making of a piece of cloth, the acts and character of the workers in any preceding department has its influence on the one following, so the overseer in any department who does not show by his life, good character and good morals, can not hope to instill into the workers the idea that better living makes for better goods.

I believe the time is fast coming when the character of a man will be given as much consideration as his ability, an immoral man or woman may for a time get by with a good production and quality in their work, but they are just like a machine that is not properly cared for, they are both going to break down soon, and it costs money to replace men and machines, a man of bad morals has nothing to offer as a panacea for the bad morals of others, a poor section man can not keep a machine in good condition, therefore, I believe the executives of our mill will look more and more to the moral side of the work, and immoral men or women cannot give a good days work, you may point to some one that will disprove this statement for a time, but just analyze your pay roll and find the best workers and has character and good morals is the one who gives you the best refund how they live out of the mill, and I think you will soon be convinced that the man or woman who suits

The cloth room overseer must be a man that will instill into the workers in the room the fact that the work they do must be above suspicion, doing justice to the mill and to the buyer, it is often a hard task, for you are often confronted with demands of the buyer that are unjust, as well as from the mill. The cloth room is often damned if it does one thing and damned if it does another.

What knowledge has the average worker of the finishing or bleaching processes necessary to put the cloth

they make in a proper condition for the consumer. I would like to know how many overseers, second hands and section men have ever seen inside a bleachery. Until the finisher and manufacturer can meet on a common ground and arrive as a fixed standard, the cloth room is in that unhappy position of having to meet the demands of the finisher if there is any business done. Without buyers the mill cannot run.

The cloth room man must have a knowledge of where the defects that appear in the cloth come from, so that he can place the responsibility at the right place, as the average overseer is a sensitive being, and none of us care to be blamed with things we are not responsible for.

The cloth room sometimes will possibly thing too much of the consumer, but I think by so doing he is acting as a safety valve, thereby helping to create with the selling end a demand for the goods made by the mill, and the selling house must know that the cloth room is not trying to camouflage the cloth, but when a piece of cloth goes out of the mill, it is just as represented in the invoice, the selling house knows full well that if the cloth does not come up to specifications he will have a hard task getting a repeat order. I think if the demand for quality would start at the opening room and continue on through

the several departments, the question of pounds will adjust itself to the satisfaction of the executive, and the cloth room would then be a pleasant place to dwell in.

No two minds will be of the opinion as to the quality of a piece of cloth, if one is a seller and one the buyer. If you do not thing so, just try to sell some article and see the result.

So if the cloth room as well as the other departments will give more thought to character of the workers and also see that they themselves show their character in their work and life in and out of the mill, the problem of "Better Goods" will be very largely solved, and when the cloth room offers its remedy for the troubles in the mill, it will be accepted in the same way we accept the remedy offered by the Doctor, even if it is castor oil. Quality and Castor oil will cure a multitude of ills, if taken as prescribed.

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Invention and the Cotton Industry

(By E. Kent Swift, Treasurer
Whitin Machine Works.)

The manipulation of the various fibres, flax, wool and cotton, into cloth is, of course, one of the oldest arts we have record of. Man was born naked into the world, and his first efforts were to secure food and clothing, but it is a noteworthy fact that up to the attempt to manufacture cotton by machinery by John Wyatt of Litchfield, England, in 1738, yarn from the various fibres was produced by the crudest of methods.

You are all familiar with the illustrations of wool or cotton being carded by hand, the tuft resulting from the carding being spun into a thread by the old fashioned spinning wheel, the ratio of spindles to operative being 50-50. These hand methods of crudely spinning and weaving seem to have come down the centuries with but little change, and the replacement of these methods by machinery is comparatively modern, the transition to modern methods through invention coming in the last one hundred and fifty years.

The first mill wherein machinery was installed was built at Birmingham in 1741 or 1742, power being transmitted by two asses walking around an axis, ten girls being employed in attending the work. This establishment was unsuccessful, and the machinery was sold in 1743. Man's mind was on the problem, however, and passing by the more or less unsuccessful attempts to develop machinery operated by power we come to the invention of the fly shuttle on a loom by Arkwright on spinning in 1769, the jenny of Hargreaves in 1770, and the mule of Samuel Crompton in 1776. These inventions brought about the successful use of power machinery in the spinning of cotton, probably the first successful mill being that of Arkwright, erected in 1771.

Perhaps I am going outside the scope of this paper in going back beyond one hundred years, but to trace the development of machinery and the influence which invention as had upon the progress of an industry it is proper to bring out the intimate relation between invention and the growth of the industry.

Arkwright's inventions prepared the way, but if it had not been for the invention of steam engine by Watt in the same year—1769—the use and value of his inventions would have been very much restricted, owing to the intermittent character of water power and the limited amount available in England, and further, it was necessary that the invention of the cotton gin by Eli Whitney in 1794 should occur in order that an adequate supply of material be available for the exploitation of Arkwright's machinery.

However, not to go too far, afield, as one easily could in this interesting line of thought, we come to the first successful mill in the United States built by Almy, Brown and Slater early in the year 1793, with

machines designed and constructed by Samuel Slater based on the Arkwright patents, so-called. This mill, it is interesting to note, consisted of preparation and 72 spindles. Cotton manufacturing in this country I think can rightfully date from the Slater mill, although previous, to this there had been several more or less unsuccessful ventures in other places.

It is interesting to see just what machinery was used in the cotton mill of this period. The cotton previous to the invention of Whitney was picked over by hand and the seed extracted, the production per hand being anywhere from one to four pounds per day. This cotton was also frequently let out to families for further cleaning and picking over. The production of the gin today is based on thousands of pounds.

This cleaned cotton returned to the mill was spread on the back of the card by taking up a handful, pulling it apart with both hands, shifting it to the right hand to get the staple straight, and then applying it to the surface of the breaker card, moving the hand horizontally across the card to and fro. The card consisted of a wooden cylinder about 24 to 30 inches in diameter and about 30 inches wide, the surface of the cylinder being covered with strips of card clothing. The cotton, carried forward on the cylinder, was acted upon by stationary wooden flats, and delivered to a small doffer, thence to the calendar rolls into a stationary can and from there to the draw frame with three lines of rolls and drawn down into a finer silver and delivered into a can, practically the same as it is today, but without the use of stop motions and coilers.

Thence it was taken to the back of a speeder, somewhat similar to a slubber of today, but without the benefit of the compound motion, and drawn down still finer by running through a fly frame. From the fly frame the roving was set in a creel and drawn through a line of three rolls and thence over a guide rod and wound on bobbins by flyers.

The usual Arkwright style of frame was built in heads of from four to not over eight spindles each. Later on they were made with heads of twelve spindles, but at first eight were the most any frame had. Filling and warp were made on the same frame, but the filling yarn was rewound afterwards on a special bobbin, so that it would fit into the shuttle.

The machinery roughly described above was made largely of wood, with very little metal work.

Coming from Slater's mill of 1793 nearer to the subject of this paper it is quite difficult to find an accurate description of a mill of exactly one hundred years ago. The following machinery, however, was in an English mill built in 1830 and may be considered representative of the period:

2—Conical Willows, running at 350 revolutions.

5—Breaker Pickers, running at 1,600 revolutions.

5—Beater Lappers, running at 1,600 revolutions.

168—Cards, cylinders running 114 revolutions.

24—Drawing Frames.

24—40-spindle Fly Frames.

50—64-spindle Fly Frames.

78—Throstle Frames.

56—Hand Mules, 144 spindles.

1,100—Power Looms running at 120 picks.

5—Winding Machines, 240 spindles.

32—Dressing Machines.

The above would indicate an organization of machinery very similar to what is in use today.

England and United States Lead.

In considering the development of machinery in the last one hundred years it is well to bear in mind that while the productive methods of manufacture and the machinery used seem in no wise related to these earlier mills, yet we are using the same general principles which they introduced, and in the last one hundred years no fundamentally new or radical changes in principle have come to the cotton industry, the only possible exception being the Heilmann Comber in 1845, whereby an entirely new method of treating and cleaning the cotton was invented.

Inventions have come, inventions whose value has been incalculable to the progress of the industry, inventions which have been made possible through the progress of science, which was unknown in the earlier period, yet before passing on to the modern development of machinery we may well pause to pay our respects to those who have pioneered and pointed out the way.

In taking up more specifically the inventions which stand out in the last one hundred years we find a story of two developments going along hand in hand; that of invention in England and that of invention in America, with the contribution of Heilmann's comber from France. In the main, however, the two great English-speaking countries have brought about the present par excellence of textile machinery.

Few Successful Inventions.

Conditions have changed very much from the time when in 1733, Kay, the inventor of the fly shuttle, was mobbed by the people to prevent his invention from being adopted for fear it might, through its efficiency, throw others out of work, but even today the role of the textile inventor is hard, as there is probably no more conservative man in the world than the textile manufacturer.

It is here that the present day machine shops serve all the industry in the development of ideas of merit. There is perhaps no other field of human endeavor in which there has been a wider range or more intensive development of human ingenuity than is exhibited in the textile sections of the English and American Patent Offices. It is the function

of your machine shops to test and measure the value of new inventions. Thro the inventor, if his idea is promising, we give the experience and ability of a trained staff of skilled mechanics, developing from the crude idea a marketable product. If the idea is not practicable it is soon found out and abandoned.

Many of you would be surprised at the number of so-called inventions which go through any one of the large machine shops during the course of a year, and probably are likewise surprised at the few new things which are suggested for your use. It has been stated that only 1 per cent of all the patents which are issued amount to anything. After some experience in the patent field I have come to the conclusion that a great many so-called inventions are dreams of what the inventor would like to accomplish rather than being practical for use.

The Influence of Labor Costs.

The English and American inventors have proceeded along somewhat different lines: England, most conservative, with a market where labor is cheap and material high, looking for all the small economies in manufacture, such as the blending of different cottons in order to obtain a maximum of quality with the greatest economy of material; America, on the other hand, running as a rule on coarser counts than England, paying more heed to production, owing to its labor market being on a very much higher basis of cost, the developments of each country, however, over a period of years being happily combined to produce the perfect machine equipment.

The first impetus which American inventors received was probably during colonial times during the Stamp Act period prior to the Revolutionary War, when the home country, England, proposed that the colonies should be merely agricultural communities, feeders to Great Britain, and England would be the provider of manufactures for the colonies. The patriotic movement of the colonies was continued up to the Revolutionary War, and after the war it was promoted in every way by our government policy of protection.

Perhaps the greatest stimulus came with the Embargo Act of 1807 and the Non-Intercourse Act and the War of 1812, when the supply of cotton goods from Great Britain was almost entirely cut off and the Americans were thrown on their own resources. The high prices of cotton cloth attracted investors to this form of industrial enterprise, and at the same time the restrictions on foreign trade encouraged the withdrawal of capital from the sea.

First Mills Built Their Machinery.

In 1807 there were 8,000 spindles in the United States. In 1815, at the end of the war, there were 130,000 spindles. It is also interesting to note by the way, the size of the mills, as after the war in 1912 there

(Continued on Page 12.)

Report on Weavers Sectional Meeting

(By W. H. Gibson, Jr.)

This was by far the largest in attendance of any previous meeting of the Weavers.

After the usual preliminaries the meeting settled down to business and discussion of the various matters before the meeting.

Q. What temperature is the best for boiling sizing and how long would it be boiled?

Opinions on this question were considerably divided, however, it seemed to be the consensus of opinion that the heat in the size kettle should be kept at around 220 to 225 degrees and cooked for one hour, or more, as starch in the sizing kettle will remain at a very high degree of temperature for a number of hours after the steam has been cut off.

The next question asked was, at what temperature should size be kept in the size vat at the slashers?

We believed for a long time that a great many people were at a loss as to just what degree heat they really had in the size vat and many were surprised when their temperature was taken in their size vats and found to be considerably below the boiling point of 212 degrees. The pressure from the steam from the steam jets in many instances caused the size to boil up when it really was not boiling. In fact, in an open size vat it is almost impossible to get more than 200 degrees.

Q. How many pounds of steam pressure is best for good running work on the cylinders?

This is a question that deserves a great deal of consideration, depending upon the speed of the slasher, the number of the yarn, the number of ends in the warp, the condition of the steam—whether dry steam or wet steam, how far the slasher is located from the boiler, and the condition of the steam lines to the slasher. If the lines are not well covered you will have a considerable amount of condensation and will not get the same heat as if your pipes were well covered. However, it seemed to be a very practical situation, and generally agreed that with 30's yarn and a warp having from 2,000 to 3,000 ends can easily be dried with from 3 to 10 pounds of steam.

The question was asked to explain the difference in 20 fluidity and 30 fluidity starch.

No satisfactory explanation was offered to this question.

The question was asked as to what is the proper weight of the squeeze rolls.

It was found from the discussion that only a few men really knew the weight of their squeeze rolls and there were various opinions as to the proper weight of the squeeze roll, depending, of course upon the class of goods and the number of ends being used at the time. After considerable discussion it was generally agreed that the average weight of the rolls on ordinary work should be around 500 pounds. How of weather, etc.

There were quite a few questions before the meeting; particularly in ever, this would not be the case on very fine work or on very coarse work.

The question was asked if it is

practical to make all even running cuts, that is to measure any given number of yards per cut.

The average mill seemed to have been making from 60 to 65 yards per cut. The question in mind was, if it was practical to make all cuts run the same number of yards, say 62 yards per cut without any variation. The meeting went on record as stating that this was not only an impractical proposition, but a physically impossible one, as cuts will vary from one loom to another. Even though it were practical to make each cut the same length at the slasher, it would not weave out the same length per cut from the cut mark, to cut mark, this variation being due to humidity, change the afternoon, that brought forth some very heated discussions and more interest was displayed than at any other stage of the meeting.

Questions were asked concerning the variation in the width of cloth, the count in the warp, the picks per inch, the standard method of figuring to determine the number of ends that would constitute any given piece of cloth.

The most varied opinions probably were on the question of selvage ends being added to the piece of cloth. Several suggestions were offered but none seemed to prove satisfactory. Finally a committee was appointed by the chairman to try to determine the proper method of figuring, and to make a report at

the October meeting of the Southern Textile Association in Greenville.

It was expressed by some at least who had made tests that cloth would vary on the loom even though no adjustments or changes had been made, this variation being brought about by atmospheric conditions or by the turning on or off of humidifiers.

There were none who seemed to think that it was practical to make an even running piece of goods in width or count without any variation.

If yarn or cloth is affected to such a great extent by the conditions of weather and atmospheric conditions then it beyond the ability of the average man to control these variations, and, of course, the same situation applies to weight of the goods as to the width.

The average mill might be running along with their weights running within five points of standard end in less than one half day, with a sudden change in the weather—weights have been known to change as much as 10 points and in some instances even more.

Under the same conditions of weather changes it has been learned that the width of goods have changed more than one half inch in less than one hours time without any adjustment to the loom whatsoever.

It is understood at the same time when the width and weight varies to the extent stated above, that this is bound to change the picks per inch in proportion to the variation

in width.

The chairman of the Weavers' Sectional Meeting met with the committee which had been appointed to investigate the matter of selvage ends, and, as that committee has gotten up a report to make to the meeting, will not go into details concerning this report. However, we sincerely trust that the recommendations of this committee will be considered seriously and passed by the general meeting of the Southern Textile Association.

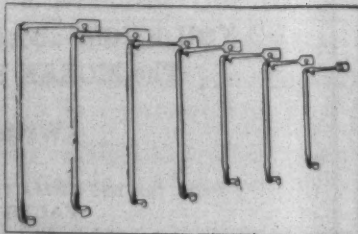
From the best information that we have been able to obtain, we find that at least half of the mills, especially on print cloth numbers, do not add anything for extra selvage ends and they are making just this much extra advantage over the mills who are adding extra selvage ends. This is due to the fact that no one here does anyone have the authority, feels right to take the responsibility of setting a standard and it is a matter of free for all and get what you can.

We feel that if these standards were passed on by the Association that we would at least have the backing or the recommendation of the Southern Textile Association, which is considered as good authority as can be had anywhere. The chairman sincerely regrets that no action was taken at the Anderson meeting, as he understands that many of the sales agents in the north were anxiously watching the weavers' meeting in order that they might pass on some standards and have a guide by which to go.

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W. H. HUTCHINS, V.-Pres. and Sec

Response to Address of Welcome

(By J. S. Stroud.)

Mr. President, Honorable Mayor and Fellow Members of the Southern Textile Association:

In response to these words of welcome, I am honored to express the appreciation of the Members of the Association for your generous hospitality. It has long been our privilege to meet in your good city and when we come to Greenville, the Textile center of the South, we always feel as though we were going back to the old Homestead. The greatest part of our members, I presume, have gone into the Textile Industry and have left our original homes, but we love to, and do often return to the old homestead and we go to refresh our lives and to regain a firm grip upon the fundamental principles of our early childhood. So it is, we feel, in coming to Greenville, that we here come in contact with the most successful and progressive principles of the Textile Industry.

I am informed that during the past few years of depression throughout the country that your mills here were not even compelled to curtail production. Besides this, while labor unrest was rife in all other sections, that you never had the semblance of trouble. These things speak well for Greenville, and shows a superior knowledge on the part of the management of the industry in your city. The members of the Association are men who are always alert and searching for a greater knowledge of the many good things that we may yet apply to our individual cases, and we know of no other place where we could meet whose influence would have a greater bearing for good than coming among you good people.

We, the members of this Association, are a body of men representing the operating end of the greatest industrial wealth of the South, and you will find that every individual present has come here with a purpose in view. I remember when this Association was in its infancy, and when these meetings meant not much more than a social gathering and being bored with a few uninteresting addresses. Today the Association is doing some real work, and during this time we have found that there are no real secrets in the operating end of cotton milling that we as men are not willing to freely discuss and give the other fellow the benefit of our experience in a work that is common to us all. Every man here knows something the other fellow doesn't and when we swap experiences we both go away a stronger man. I believe it was the poet Milton who said after touring Italy: "I became a part of all I met." This is the one great object of this Association. That we give a part of every member to the other fellow.

We have already unconsciously built up through the Southern Textile Association a great organization of team work, which has made the Textile industry of the South the most vicious competitor of all other Textile centers. I believe that our rapid development and high stand-

ard of efficiency attained in the past few years has been brought about, to a large extent, by the intimate relations between the members of this Association, who are on the operating end of the industry. If you have kept up with the work of the Association, you will know that all the work is not being done in meetings of this kind, but that a great deal of experimental work is being done in various mills which is reported at sectional meetings of the different departments at intervening times of the Association meetings. I attended a sectional meeting of the Carding Department at Charlotte last Spring, where many of the important questions of this Department were discussed. At this meeting were present some of the most successful superintendents and carders who gave freely their views and experiences, which were of much benefit to many of us. Much good is being done in this and many other way by the Association.

While we have done a great deal to effect a strong organization, we need to get more of the spirit of co-operation injected into the members of the Association, and there will be no limit to what we can do for the industry in this Southland of ours. Let us, therefore, as individuals do our duty in building up thro the Southern Textile Association a great organization of team work which may place the South second to no section, nor any Country in the manufacture of textiles.

If the management of every mill in the South could only realize the possibility of the Association work he would not only gladly encourage his men to attend but would be willing to go to some expense to have from one to all foremen and assistants present.

To reach this high standard of efficiency in Cotton Manufacturing there are other problems with which we have to deal besides a 100 per cent production of first class products at a low cost. It is true these are three important requisites, but there is the human element to serve, embracing all the complex problems of life. I repeat, we have come here with a purpose in mind and heart. In coming in contact with each other we hope to return to our respective stations not only better prepared to handle manufacturing problems but better equipped to cope with the human problems of life; relieving a burden here and there, and making life happier for the more unfortunate ones.

If we should become blind to the betterment of the social and moral conditions of our communities, little or no progress would be possible for the Textile industry in the South. In fact the most rapid progress has been within the past few years since we have given more attention to community welfare. Today, there is hardly a mill village where the living conditions are not fifty to seventy-five per cent better than ten to fifteen years ago, and these same mills that were then producing eighty-five to ninety per cent are today turning out ninety-five to one-hundred per cent of its capacity.

Great strides are being made today along the lines of community welfare, and for the development of the young manhood and womanhood in both Y. W. C. A. and Community buildings, recreation and play grounds which take much of the drudgery out of work and give people something else to live for besides work alone. We men as Superintendents, Overseers and Assistants have seen the advantage to industry and to the individual in these developments, and have aided every good movement of this kind. One could not say we are a body of men with a higher than the average literary education, but one cannot find a class of men in any industry better equipped to deal with the human industrial problems of our Country. In other words, we are full blooded Americans, and believe in developing our industry with the same kind of people without the interference and influence of people of foreign blood or of foreign sections.

To fully perform our duty along these lines, it requires ability in leadership and the confidence of others in our character and lives. To be a man capable of coping with all the human and industrial problems of life the mill work requires some of the finest traits of character that can be produced. And I believe you can find in every Superintendent, Overseer, and Assistant a great deal of energy and thoroughness in performing his duty. He is keen to see and observe the needs of the day. He is usually a man of good judgment and is fair to all to the extent of the Golden Rule, so far as possible. His knowledge of all

problems makes him resourceful enough to do the right thing at the right time. With a body of men possessing these qualifications, what is there we cannot do for the Textile industry.

Let us, therefore, develop in ourselves also all other worthy traits and qualities, and I will say to you good people of Greenville, we have come here to learn more about the entire situation. We are glad indeed to be in your midst, and we trust we shall return to our homes with an organized spirit of co-operation, to make the Southern States the greatest manufacturing center in the world. I believe this can be done with an organized effort thro the Southern Textile Association. Let us not only do this, but let us go back better prepared to give our employers more efficient service and also better equipped to deal with the human problems of our daily lives. Let us also remember that in developing the social, moral, and mental life of our community, we not only serve our industry but our fellow men as well.

The environments at Greenville are conducive to the progress of the textile industry, and we are glad to be with you and partake of your generous hospitality.

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Weaving and Slashing--and Better Goods

(By W. B. Williams, before Southern Textile Association.)

Mr. President, and Gentlemen of the Southern Textile Association:

When I was asked to talk for a few minutes to this Convention on the relation of Slashing and Weaving to Better Goods. I came to the conclusion that it was better to present to you practical thoughts that we can put into use each day, rather than to come to you with theory, so what I will have to say to you will be along practical lines gathered by experience.

We will take it for granted that the Warper Beams delivered to the Slasher are filled with an average good Yarn, reasonably clear of knots and gouts, the yarn having received proper attention in each process put through.

Slashing is a process of running threads from a number of Beams onto one beam, with the threads going through size vat and around drying Cylinders in the intermediate. In the slashing of Warps I will call to your attention some things of importance; first, sizing and drying; second, tension; third, the lease.

A good size can be made of a mixture of water, starch, gum in the yarn, the gum for a binder, the fats to keep the yarn mellow and pliable.

The cloth to be woven should be considered when we make up the formula for size. Size of the right body for 64x60s, is too light for 72x76s and size that is suitable for 72x76s is too heavy for 64x60s. Warps should be dried as near the point as possible, where there is not any more moisture than is common in starch, of course, this is to be governed by the feel of the yarn. I am told that the natural moisture in starch is around 10 per cent. Too much moisture left in the warps will cause the starch to lose in efficiency and shed even before the warps will mildew.

The tension has an important place in better goods. It is best to have cylinders fitted with ball or roller bearings so they will turn easily. Then the yarn should only be run with tension enough to insure the turning of the cylinders. It may be necessary to speed up the size rolls by changing the gear on the side shaft. This will cause yarn to feed faster. When this is done then it is easy to regulate the tension with flannel on the delivery roll. The head friction should pull regular. A little graphite on the disc will help them. This friction should only be run tight enough to take the yarn from the delivery roll and not to pull the cylinders. There is another friction usually

run on the two back beams of the creel, a cord or a strap with a weight fastened to one end and swung over the beam head. This weight should be hung on the side of beam that is pulling up and be only of sufficient weight to hold the beams when the slasher is being slowed down.

The lease also has its place in better goods, therefore it is necessary to run the warps straight with the threads well separated. To do this I would begin by counting threads in the strike comb when I lay the set in on the back of slasher. This is done to get a regular sheet all the way across. Then have lease rode on front spread so there will be about a 4" opening in the sheet of yarns. This will make it easier to see anything that goes wrong with the lease.

My opinion is that a double comb on the front is of great help, one comb with perpendicular teeth, the other with an angle of about 45 degrees. This will eliminate any crossing of threads or changing their positions as they pass around the delivery roll and onto the beam.

Weaving is the art of interlacing threads together, with a loom, forming them into cloth. Time forbids a lengthy discussion of weaving, therefore, I will talk from this

standpoint: the looms are kept in good repair with all parts properly adjusted, sure being true, we want to adjust the help and conditions of the room to fit the looms. The successful overseer is the man with high ideals of right living, by his clean living he commands the respect of all who work for him, he is a leader and teacher.

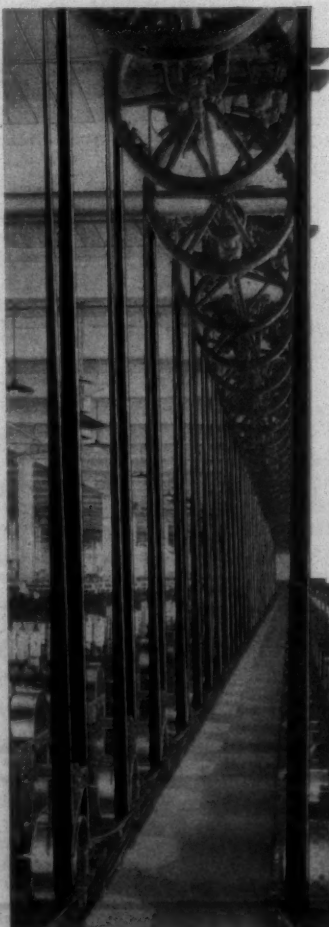
Our mill operatives are native born, the product of our southland. They have proven that they are second to none in efficiency, yet they must be studied to know their abilities so as to apportion to each weaver the correct number of looms that he can operate successfully. Then if we keep a temperature of about 80 degrees and 70 degrees humidity, looms and floors clean, and the room well lighted, I do believe that we will make better goods.

I thank you.

British Cotton Yarn Mills Enter Price Fixing Pledge.

Manchester, Eng.—Minimum standard yarn prices have been fixed by the Ring Yarn Association, of Lancashire, comprising 67 firms using ring spindles only. The members have pledged themselves not to sell below the prices agreed upon.

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Relation of Spinning to Better Goods

(By J. B. Harris, before Southern Textile Association.)

When requested to talk for a few minutes at this meeting on “The Relation of the Spinning Room to Better Goods,” I thought of trying to prepare a paper that would cover every detail of the management of a spinning room. After considering the matter, I reached the conclusion that it would take more time than we have today to enumerate in detail the many “little things” that affect the quality of yarn during the process of spinning.

As the limited time we have will not permit of a lengthy discussion, I will refer very briefly to a few of the things that must be looked after if we are to produce the good, even yarn that is so essential to “Better Goods.” Among the most important it, the amount of drafting that shall be done in the spinning room. This will, of course, depend to a certain extent upon the amount of drafting you may be able to do, or may want to do in the Card Room.

I will not undertake to suggest how much you should draft in the Spinning Room on the various numbers being spun, as you gentlemen with your knowledge of the local conditions in your mills are better able to determine that than anyone else. I will say, however, that it is my opinion that bad running spinning, resulting in bad, uneven yarn, is sometimes caused by too much drafting in the Card Room as well as in the Spinning Room. A good many mills have found that they can run with considerably less twist than was once thought necessary. I have in mind a mill that is running four teeth less twist on 30s warp than was formerly run. The yarn is as strong, and their work runs as good as before the change was made.

If the many “little things” that must be looked after to properly manage a Spinning Room, are looked after, you can run close around standard twist and get a good, even yarn that will help a great deal toward making the “Better Goods” we are trying to make.

We all know that in order to produce even yarn a spinning frame should be periodically levelled and lined, the rolls cleaned, the spindles rings, and guide-wires properly set and the spindles, rolls, etc., regularly oiled. But do we see that this work is done?

We know further, that blunt or worn roving skewers and loose or broken steps put undue strain on the roving. We also know that bad top rolls, roving traverses that are not working, worn saddles, levers, or lever screws, or levers resting on the boards will cause uneven work. We know these things, but do we see that they are properly looked after?

Upon taking charge of a Spinning Room once, I remember finding one section of filling that had been, and was then causing lots of trouble. I found that the section men had

been turning over the rings wherever they found one badly worn until new rings and old ones were mixed all over the job, and they were using the same weight travelers on both. You can readily imagine the result of such a mixture. In another part of the same room I found new rings that had been running for several months which had not been cleaned at all, and where no changing of travelers was being done. Lack of attention to matters of this kind has caused lots of bad work.

Passing to the Spooling and Warping for a moment, we find another place where the “little things” must be looked after. A few thread guides on each frame set too wide, letting through slubs, gouts, loose threads, etc., and a few set too close, straining and “skimming” the yarn, will make a material difference in the quality of it. A little time devoted to seeing that your warpers stop when a thread breaks, and that the slack roll is working smoothly and preventing kinks, is time well spent.

Many meetings similar to this one have been held since the Southern Textile Association was organized. At each of these meetings we can learn something worth while to us and our employers if we are looking for it. This is particularly true of the Sectional meetings. The benefit our employers derive from the new ideas and new methods we learn here, will depend on our putting them into effect in our respective mills. Some times our new ideas and new methods do not work out as well at first as we expected, and we become too easily discouraged and slip back into the old rut. If there is any one thing that I consider of vital importance in “The Relation of the Spinning Room to Better Goods,” it is that the Spinning Room be in charge of a man who is willing to look after the “little things,” who is wide awake enough, and energetic enough to keep up with what the other fellow is doing, and who has “Stick-to-it-iveness” enough to follow up bad work until the cause of it is removed.

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Cotton Spinning: Future Possibilities.

In the mixing of cotton one can imagine the practically total elimination of the dirty and clumsy travelling lattices and the substitution of pneumatic systems to convey the cotton from the bale breaker to the bin, thus extracting much dust and impurities and preventing the deposit of shells and leaves on the mixings over which a lattice travels. The same principle, of course, is already used in the cages of all openers and scutchers and also in aspirators on the comber, but so far is only used to a limited extent in the mixing room. The future will see the delivery of cotton to the opened from cages, which, of course is purely a pneumatic method; but before this is done methods of opening cotton more thoroughly will be devised. The clumsy methods of past ages still survive in most of our opening machines. The original use of the Crichton opener for short-stapled cotton stamped that intention so indelibly on mill authorities and machine makers that only a few even yet understand its action or appreciate its use for any cotton. Opening cotton by beating it in a free condition in air is the only way that will be adopted in the future. Already we find the vertical beater opener being used by a few intelligent firms for a wide range of cottons, and there is no doubt that in the very near future the principle will be rapidly developed. A great advance has been made in this direction and yielded results that indicate very clearly that a single opening process is sufficient without any further treatment. The use of the scutcher is not necessary as a cleaning or opening machine when the newest type of opener is in operation; its use as a mixer of laps and to form uniform laps ready for the card can only continue until a device or machine is brought out that will form previously well-opened cotton into a uniform lap without any beating action. One-third to one-half of the blowing-room machinery would then be scrapped. There is nothing incompatible with present developments to prevent anticipation of these great improvements in opening and cleaning cotton and considerably reducing the number of machines required for this purpose.

Details connected with the blowing room will follow this line of development, and fans, flues and dust cellars will be constructed on sound, practical lines, and aspirators such as we find on the comber will collect the fibres and remove the dust and dirt from such machines as the openers and cards. It is easy to visualise such an aspirator in the dust chamber.

A glance in the cardroom will probably suggest to the very thoughtful observer that the future holds greater promise of developments here than in the blowing room. There have not been lacking imaginative souls who have conceived the idea of a machine to take in a card sliver and deliver a yarn, and have even gone a step further and invented machine to do it. We find nothing of the kind in our mills to-

day for counts outside waste. Yet the great number of machines in the cardroom must be constantly worrying our inventive geniuses to devise means of getting rid of many of them and to save capital, labor, room and accessories, such as power bobbins, cans, etc. Probably failures in the past have been due to our primitive ideas of drafting, diameters of rollers, weighting and spacing of rollers. When we consider that all the cardroom machines are employed in preparing the cotton for the spinning machines, it requires little thought to realize that a more thorough understanding of drafting and the utilisation of this drafting in an increase of draft in the spinning machines, there would naturally follow a great reduction in machines in the cardroom. If moreover, the same understanding was brought to bear on the fly frames and other machines in the cardroom, the present limited amount of draft could be increased, and a still further decrease in machines would be the natural result.

Associated with this reduction in cardroom machinery other important effects follow from the better understanding of drafting. Drafts will not only be greater, but it will be far superior to what occurs usually between rollers, so that uniformity and strength are both increased. Whilst this all comes within a conceived picture of the future in a general sense, the writer has seen the process actually at work on a large commercial scale, producing the results indicated above.

We can still enlarge our picture of the future by giving a thought to management and organization. The day of secrets in cotton spinning are long past. Examples could be given of up-to-date mills where every departmental head and their assistants are made acquainted fully with detailed information of every section of the mill processes, and all faulty work carefully considered by them. Even every female operative in the mill (in groups at a time) are shown samples of cotton in its various stages at frequent intervals and instructional advice given and comments encouraged.

Every sample of cotton in its various stages is taken by someone entirely independent of departmental heads, and tests made on modern testing machines. Microscopic work is done and micro-photographs taken of cottons and yarn. All these tests are tabulated and each day submitted to the manager, after which they are duly filed for future reference. This testing is carried out in all directions, and to give one instance of its usefulness it may be mentioned that every row of new needles in the half lap of comber is put under the microscope and photographed in order to have direct evidence of perfectly level and pointed needles.

Every count and class of yarn has a special form filled in with full details of the cotton and all necessary information, such as speeds, drafts hanks, etc., that lead up to and include the spinning of the yarn. All this is done (and ought to be done) by an intelligent woman and her girl assistants.

A recent visit to one of the most

successful of French mills presented an example of thoroughness in this direction and extended even to obtaining the average length of the fibres of every sample of cotton submitted, and this is done before buying, and also frequently at each process. The laboratory, if it may be so called, is situated some considerable distance from the mills. The manager of these mills, old as he is in experience and successful as he has been, openly confessed that a great deal had still to be learned about cotton spinning. Mills themselves are not experimental rooms and it is almost foolish to use them as such, but experimental machinery can be easily installed which, if made for wide variations, and with readily adjustable arrangements would quickly solve some of the problems which frequently confront mill management.

Every up-to-date mill ought to be able to produce a sample of yarn from a broker's sample of cotton within an hour of its delivery at the mill, and this method will certainly be the main criterion of the future as a basis for purchase.

Methods of recording, in a systematic manner, will become an absolute necessity in well-managed mills of the future, and the managers' office will become the repository of every item of information concerning the mill and its operations, whether inwards or outwards. He must know at once whether his cotton is coming through to sample; his waste increasing or decreasing; the cotton at each process in regard to quality and correctness of hank, etc.; why productions vary; why a machine is stopped; his stock of cotton, yarn and conditioning at any given moment; quality of his coal and costs per unit of power; charts not merely of cotton or yarn prices, obtained long after the events, but charts of a variety of important factors connected with organization. These methods will naturally vary from those adopted in many mills today, when a manager, after six months or more, suddenly begins to be suspicious that one or more of his cottons is deteriorating, or that there is an appreciable percentage of more waste in his cottons, or is being taken out in the processes.

Another and very important feature that the future holds in store is the effect of the research work now being so thoroughly carried out at recognized centres by highly trained observers. Who is going to interpret the hundreds and thousands of observations carefully compiled? Who is going to translate them in a practical form so that they can be utilized in the mill? Are our future managers going to receive their instructions from a college or laboratory? Are the responsible of mills and departments of the mills preparing themselves to appreciate and to understand these long-awaited scientific methods of dealing with the cotton fibre?

Our technical schools, certainly the better type of schools, recognizing the necessity of a scientific training for students, have made the accessory subjects of mathematics, mechanics, engineering, etc., to occupy an important place in the teaching of cotton spinning. This

phase will develop. If a writer now uses the harmless little letter "x" in a cotton-spinning calculation, it is no longer jeered at as "theory." The coming mill manager will consider it child's play to follow out the necessary mathematical demonstration of why a variable speed of spindle is an advantage in a ring frame. A. B. Sc. will not necessarily enable a man to supervise a department or manager a mill, but if thus equipped and possessing a practical mind, combined with ability to turn his scientific training to a practical use, he will have the making of a serious competitor to those who rely upon memory, rule of thumb or notebooks.—B. W. Scott in Textile Recorder of Manchester, England.

Color Card Association Introduces New Shades.

The Textile Color Card Association of the United States, Inc., is just releasing to its members the 1923 spring season color card of America, forecasting the colors that will be fashionable during the coming spring and summer seasons. The new card portrays eighty colors, sixty-six of which are shown in silks and fourteen in worsted fabrics. In a separate group are ten shoe, leather and hosiery shades.

Among many innovations are Strawberry, Crushed Berry and dulcet greens, all of which are derived from Persia pink and a deep strawberry shade called Rubvair. There are two ranges of cool grayish greens, one showing Pistache and Eucalyptus tones and the other Almond Green and Blue Spruce. Some Egyptian blues are called Cleopatra, Rameses and Pharaoh, and blend harmoniously with the deep golden orange of Oriole and Eldorado. The Venetian influence is conveyed in roses, hedges and light greens such as Harlequin, Meadow Grass and Cress.

Orchid and violet shades are prominent. There are pinks called Clover and Onelia, blue tones known as Daybreak and Viola, and a rich purple called Fireweed. In browns there are Cork, Sandalwood and Oakwood, as well as a number of golden harvest browns, creamy fawns and new sand shades. There are some novels and some light browns in the woolen group, called Sirocco, Pampas and Pueblo. The grays are named Granite and Traprock, and there is a yellowish tan called Calabash. The card will be out for general distribution to the trade about November 6, it is stated by Margaret Hayden Rorke, managing director of the association.

Dominican Republic Cotton-Goods Market Overstocked.

During 1920 cotton goods of all kinds were imported into the Dominican Republic far in excess of the existing demand, and since that time trade has been slack. At present stocks in general are of a very poor assortment, and while some merchants are buying for replacement their purchasing power is still curtailed, and consequently imports are small. (Consul W. A. Bickers.

Invention and the Cotton Industry. Room to Better Goods.

(Continued from Page 6.)

were 96 mills near Providence, containing 65,000 spindles, or an average of 680 spindles per mill. Eighteen of these mills had less than 300 spindles and the largest had only 5,000. During this period, most of the machinery was built by the mills themselves, although we have record that in 1913 the Boston Manufacturing Company at Waltham began to sell machinery to other mills under certain patents which they held.

It is also a fact of interest that the Boston Manufacturing Company's mill, which was incorporated in 1813 was the first mill in the world where the whole process of cotton manufacturing from spinning to weaving was carried on by power, the first mill being one of 3,000 spindles, turning out goods at the rate of 4,000 yards per week. It is rather a coincidence that the President of this Association, Mr. Robert Amory, is today running the Boston Manufacturing Company.

Genesis of Big Machine Shops.

The first of the American machine shops had their beginning around this time, and they were brought into being very largely by the invention and development of new and improved machinery for the mills.

The Lowell Machine Shops were founded by the proprietors of the Locks and Canals Company at Lowell to build machinery for the development which was carried on there, the year being about 1824. The Pettie Machine Works were started by Otis Pettie, who was by trade a master mechanic, his first order being the machinery for a cotton mill to be built at Nashua and this machinery was delivered by ox team over the road. These shops were founded in 1932. In 1839 the Saco Water Power Company was started, which took over the machine shops which had been built by the York Manufacturing Company to supply their own needs for textile machinery.

The Kitson Machine Company was started by Richard Kitson in 1849, he being one of the first manufacturers to make needle-pointed card clothing in America. Picking machinery was then taken up by them in 1852, and has been built by them ever since. These shops are now represented by the well-known firm of Saco-Lowell Shops.

In 1826 Paul Whitin & Sons at Northbridge, Massachusetts, were operating a small iron smelting plant and forge, employing four men making repairs for cotton mills, also hoes and scythes for agricultural work. From this small beginning the Whitin Machine Works owes its start. In 1831 John C. Whitin took out a patent for a picker, the success of which laid the foundation for its present growth.

The present Fales & Jenks firm goes back to the partnership in 1830 of Alvin Jenks and David G. Fales, the first machine constructed by them being a spooler, sold for \$60. It is also of interest to note that in the first two years of the existence of the firm they manufactured cotton-spinning and thread-making machinery, and their development has been largely along these lines ever since.

The Mason Machine Works started from the inventive ability of William Mason, who was the inventor of the self-acting mule, who was responsible for the development of the ring traveler, and who was the originator of the American type of locomotive engine, the present Mason Machine Works being erected in the year 1845.

The Draper Corporation may be said to have had its early beginnings through the invention of Ira Draper on temples, his first invention being of a rotary temple, the use of which enables a weaver to run two looms where before he had been able to run only one. However, Cotton Chats of October, 1901, gives to

George Draper the credit for firmly establishing the present successful company. In 1852 he formed partnership with his older brother, E. D. Draper, and moved to Hopedale in 1853. In 1856, E. D. and G. Draper took over the debts and assets of the Hopedale Community, and the present Draper Corporation is the result of the consolidation at different times of the various Draper partnerships.

It is out of the question, however, to make a complete record of the start of all the machine shops, but they had their beginning and their impetus from invention or from improvement of existing machines.

I am paying some attention to the

development of the early machine shops, as they came into being very largely through inventive ability of their founders, and today invention, while it may originate in the mills, is carried to its logical conclusion through their agencies.

Invention, which at one time was the result of experiment on "cut and dry" methods, is becoming today more and more the conclusion of a definite purpose. No more outstanding illustrations of this is to be had than in the development of the Northrop loom. Starting in 1888 with the definite purpose of production an automatic loom, they put on the market, in 1894, a perfected machine, the outcome of the efforts of five inventors devoted to this task for several years.

Preeminent American Invention.

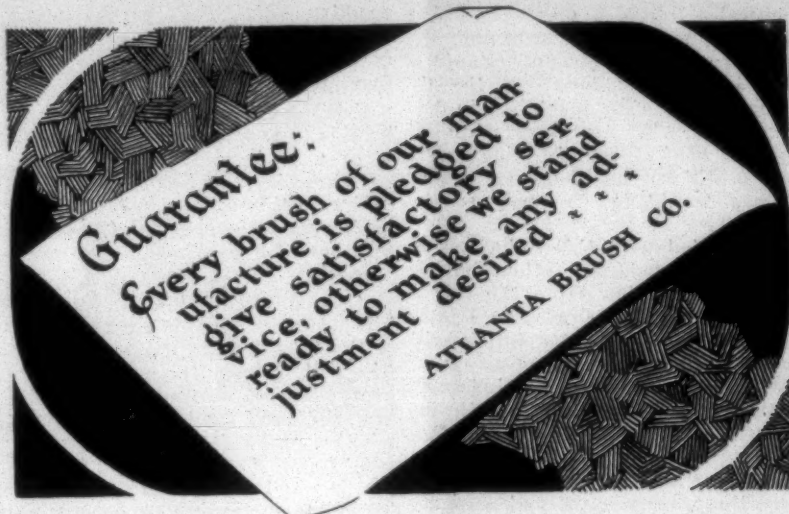
It would be beyond the space available for this paper to enumerate in detail the splendid record of American invention. I should like, however, to touch but lightly upon those accomplishments which stand out preeminently in our annals. To my mind these are as follows:

The invention of ring spinning by an American named John Thorpe in 1828; the invention of the traveler by Addison and Stevens in 1829, which was an essential adjunct to ring spinning, followed in 1880 by the development of the Rabbeth type of spindle (for which credit must be given to a number of inventors who perfected it), thus completing the spinning frame, whereby production was raised from a spindle speed of 4,000 or 5,000 turns a minute to at least 9,000 or 10,000 turns today.

Going back again to the invention of the self-acting temple for looms in 1816 by Ira Draper, followed by the invention of the shuttle guard for looms, let off motions, parallel pick motions, self-threading shuttles, etc., these all made possible the marketing of the automatic loom in 1894. The self-stripping motion for cards by Woodman and Wellman, the application of the stop motion to a drawing frame are also contributions from American inventors. From England we have the development of the compound motion on the roving frame, although America shares in this through the fact that this was the invention of Aza Arnold, a citizen of Rhode Island, in 1822. The year 1845 is to be noted for the invention of the cotton combing machine by Heilmann of Mulhausen, Alsace, the principles of which are still used today on all combing machines. To England goes the honor of the development of the revolving top flat card in 1857 by Evan Leigh of Manchester.

The lesson which comes to my mind is, first, that the inter-dependence of invention upon invention resulting in the perfection of the machines today (and there is in the mechanical field no more perfect, more mechanical or more automatic machinery than is seen in the cotton mill) rests not on the efforts of one man, but on the constant endeavor and study of thousands of those who have gone before, and, secondly, that upon successful invention rests the prosperity of our mills today.

And now before closing this article (Continued on Page 24.)



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The Future of Cotton Manufactures.

(By Kenneth Moller, Engineer, Lockwood, Green & Co., Moston, Mass.)
(An address before the National Association of Cotton Manufacturers.)

It must be distinctly understood that the points brought out are hardly any of them commercial possibilities today, but we do consider them all experimental possibilities. The sole object of this paper is to point out a possible line of development for the future, and to tell what some people are doing in this direction.

I suppose it seems like heresy to say that any radical changes or improvements can be made in an industry which was old when America was discovered—probably the oldest industry in the world, and one that has certainly been considered as highly developed for the past one hundred years.

The Draper Company, in its Textile Texts, gives a list of "Interesting Dates" in Cotton Machinery History. The first date given is 1730, the last 1870. Just think, not a single interesting date in the development of cotton machinery for fifty-two years. I think Draper a little modest in this statement. Certainly, 1894, "The Commercial Application of the Draper Loom" is interesting to a good many people. It is true, however, that development in the cotton manufacturing processes for the last fifty years have been mostly of a minor nature—a new shuttle here, a new tension device there. Perhaps the most important improvements have been the application of power to hand operations. Probably the two most important ones requiring inventive genius have been the Draper Loom and the Barber-Colman Warp Tying Machine.

Expect Early Improvements.

Have we come to a standstill in the development of the cotton machinery process? Will our sons and grandsons be manufacturing on the same machinery and the same processes which we are using today? I personally think it very questionable and in the next decade look for tremendous forward strides and real pioneer work in this oldest of industries.

What are the processes involved in cotton goods manufacturing what are people doing to reduce and modify these processes, and what are the possible developments for the future? The ordinary routine for a coarse goods mill might be outlined as follows:

- 1st, a vertical opener;
- 2nd, two or three processes of picking;
- 3rd, a card;
- 4th, two or more processes of drawing;
- 5th, a slubber;
- 6th, an intermediate;
- 7th, a frame;
- 8th, a spinning frame;
- 9th, a spooler;
- 10th, a warper;
- 11th, a slasher;
- 12th, a loom.

Twelve processes, and possibly sixteen machines, which cotton goes through today, from the bale to the gray goods. Certain of these machines perform separate functions,

others perform the same functions but in varying degrees.

Review of Processes.

Let us first consider the machines through spinning. It is possible to group the functions into three or four classes. Vertical openers, pickers and cards are obviously machines for opening and blending the cotton. This might be one function. Drawing frames are for laying the fibres parallel, blending and theoretically evening the sliver. Slubbers, intermediates, fine frames and spinning frames are for producing the size of the roving, further blending, theoretically further evening and twisting the fibre. All these processes have the common functions of blending and evening. The drawing, roving and spinning processes have the function of blending, drawing, laying the fibres parallel, and twisting. It is obvious that bale cotton must be opened and cleaned, therefore, we will always have some processes corresponding to picking.

The fibres must be separated and small foreign matter taken out, and the fibres arranged for spinning. We will probably always use cards for this purpose. After we get card sliver all of the other processes, as has been shown, are used for five purposes—blending, evening, laying the fibres parallel, drawing and twisting. Card sliver will certainly have to be twisted to make a yarn, therefore, we can probably consider some form of spinning frame as a fixture. This means that the least conceivable machinery for spinning cotton from the bale will be an opener, a card and a spinning frame.

Possibility of Combing Machines.

I hesitate to say it, but I have seen very fair cotton yarn made

with only these three machines. I have seen good cotton yarn made with a vertical opener, a card, a slubber and a spinning frame; in one plant, with two Creighton or vertical openers in series the result is cotton sufficiently clean and open to put directly on the card, provided the stock is going into coarse work. As a matter of fact, the mill people said that the only reason for running a picker was to make a lap. Can you not conceive of a hopper on the back of a card and some device to feed the cotton in this hopper evenly and uniformly to the licker-in? Frankly, I do not know what this device will be but inventive genius, if applied to this problem, could probably solve it. This would be rather a radical change in the manufacturing of cotton yarns—directly from a vertical opener to a card. No one touches the cotton from the bale to card sliver.

In experiments which we have run at our Cotton Research Company, an apron was put on the back of the cards, the open cotton which had passed through three Creighton openers was laid on this apron in measured quantities; the result was a clean, even card sliver, entirely satisfactory in every way. This was later spun by the ordinary method into a 23s single yarn and showed a break equal to or above the standard for that size yarn and type of cotton.

It is perfectly possible to put a 4-head coiler on a card, take off a small sliver, put this directly on to the slubber and spin counts up to 15s or even finer on the spinning frame.

This would give us a yarn direct from the bale via the vertical open-

er, the card, the slubber and the spinning frame. The only missing link today is a satisfactory hopper feed for the cards. Just visualize a mill on this system—a cotton warehouse with two or more vertical openers in series. From the warehouse the cotton is blown directly to a belt distributor running over the hoppers on the cards. The only other machinery is a slubber and a spinning frame.

Practically a Waste System.

As a matter of fact, I have seen a spinning frame which spins yarn directly from card sliver. Of course, this is not a commercial proposition yet, but it has possibilities. If it works the whole spinning mill will consist of openers in the warehouse, and nothing but cards and spinning frames in the mill. Of necessity, all developments of this nature must be conducted on coarse yarns; then, later, refined for the finer goods. and I strongly recommend to any spinner of coarse yarns, say up to 15s, that he try the experiment of manufacturing these yarns with his regular picking process, a card with a 4-head coiler, a slubber and a spinning frame. I know he will be surprised at the results.

This is really nothing but a well-known waste system applied to good cotton, and one process of carding left out. I believe that it has been called a waste system so long that people have not thought of the possibilities of developing it for cotton. Just imagine the saving of floor space, initial investment, power, labor, waste and inventory in such a mill. This all sounds like H. G. Wells' "War of the Worlds" which we read twenty years ago, but we were surprised at Mr. Wells' prophecy during 1914-1918.

I know many manufacturers will say this thing is impossible, that we will not get the blending, we will not get uniform size, we will not have the fibres parallel. In comparison with the present system this may be true. There are other ways of getting blending, and do we know how much we need? As for size, a great many tests have shown the card sliver as the evenest sliver in the mill. For even yarn, we are interested in the relative weight of sliver inch per inch, even more than yarn per yard. The principal effect of drawing is not to get evenness but to lay the fibres parallel. How much of this is necessary for coarse yarns?

The Ring Mule.

A frame is being developed in England which will spin on the bare spindle. They call it the ring mule. This is a problem well worth working on.

Look at the progress on long draft spinning as made abroad. A Lockwood, Greene man, in Switzerland last year, saw them spin 90s single from a double 6 hank roving—a draft on the spinning frame of 30s.

Take the German creel which has been described and which warps direct from filling-wind bobbins, cutting out the spooler. This has been running for twelve years in Germany. I saw one running in New England a few months ago.

Look at the possibilities of the
(Continued on Page 24.)

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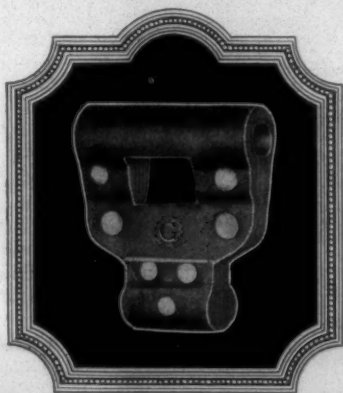
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in work or about as soon as produced. Estimates place the present monthly consumption of raw cotton at 40,000 bales.

Netherland Mills Occupied.

"In the Netherlands, as in Italy and Switzerland, the mills at present are well occupied, although slackness may develop in the winter months.

"Belgium textile mills are operating at about an 80 per cent capacity and although conditions are better than a year ago new difficulties are causing anxiety.

"Polish cotton mills have been running at capacity for a long time and many are now operating two shifts of eight hours each. While the spindleage is approximately 900,000 last reports indicate that the basis of production is just about double due to the overtime operations. The chief reason for this activity rests in the steady export trade, which is estimated at between 30 and 40 per cent of total production. Very little business is being done with Russia, most of the Polish products finding its way into the Balkans and Germany. Raw cotton stocks are readily available some American shippers maintaining stocks at Bremen or in Lodz against which spinners draw according to their requirements. The Polish textile industry is noteworthy in that the larger textile interests combine spinning, weaving, bleaching, dyeing, napping, and other operations, an exceptional condition for Europe.

"Austria has been operating full time but economic and financial upheaval is causing material slackening. It is estimated that half of the cotton yarn spun in Austria is woven domestically, the remainder going for export to nearby countries. Of its cotton goods Austria imports five times as much cotton as it exports, and mills are therefore confronted with an increasingly embarrassing problem. Czechoslovakia due to relatively high currency value and high internal prices, cannot at present consume or export mill production, and therefore, mills are in an extremely difficult situation, many operating only two or three days a week. The belief is prevalent, however, that as domestic economic difficulties improve, the cotton industry will do likewise.

"Unemployment in English textile industries is decreasing but wages in September, 1922, figured at the current exchange, were slightly lower than those paid in February. Male piece workers for a week of 48 hours received \$13.64, male time workers \$12.08, machine men for a week of 47 hours \$14.94, and engravers \$16.76. Belgian male spinners operating 1,600 spindles receive at the current exchange, \$1.86 per hour and an additional \$0.06 per hour for each additional 200 spindles up to 2,400. Ring spinners operating up to 300 spindles receive \$1.04 per hour per 100 spindles and \$0.066 per hour for each 50 additional spindles up to 504, while operators of 525 spindles receive a further increase of \$0.066 per hour. Belgian weavers receive \$1.12, \$1.17 and \$1.19 per hour for operating 2, 4, and 6 looms respectively. Unemployment in Belgian textile industries is decreasing

Wages in the Italian textile industry at present averaged on September 7: Female cotton spinners, 1.53 lire (the New York rate for the era on Sept. 7 was 434 cents); cotton weavers, 1.45 lire.

South China Demand for Gray Shirtings.

A good market for American gray cotton shirtings exists in South China, and this class of cotton cloth comprises one of the large piece-goods imports into Hongkong. During 1921 there were 215,750 pieces of gray shirtings imported into Hongkong. These came principally from Japan and North China. The success of American goods in this market would depend largely on the ability to meet Japanese competitive prices. (Vice Consul William J. McCafferty, Hongkong, August 26.)

Exports of French Silks Increase.

The export value of French silks for the first six months of this year was higher than in January-June, 1921, the figures being respectively 676,175,000 francs and 615,884,000 francs. Exports went principally to England, the United States, Belgium, Argentina, Germany, and Switzerland. [A detailed statement of the French foreign silk trade may be obtained from the Textile Division, Bureau of Foreign and Domestic Commerce, Washington, by referring to file No 70904.1 (Consul Hugh H. Watson, Lyon, September 20.)

Brazilian Cotton Piece Goods Production.

Brazilian production of cotton piece goods has increased in the last few years. In 1913, 240 mills manufactured 389,000,000 meters of cloth, compared with 587,000,000 meters turned out by 343 mills in 1920. Production in the latter year was divided as follows: Unbleached, 162,000,000 meters; bleached, 150,000,000 meters; printed, 275,000,000 meters. (Consul General A. Gaulin, Rio de Janeiro, August 26.)

Australian Woolen Mill Production

The production of woolen mills in Australia consists chiefly of tweeds, flannels, and blankets, all of which have a high reputation for purity and durability. Production figures for the fiscal year 1919-1920 are the latest available. In that year there were manufactured in the Commonwealth 5,338,177 yards of tweeds and woollens. In New South Wales the figure was 2,208,846 yards and in Victoria 2,212,202 yards. The production of flannel in all Australia in the same year amounted to 4,741,621 yards. (Trade Commissioner J. S. Sanger, Melbourne, September 7.)

Irish Flax Acreage Lower.

Estimates of the Irish flax acreage vary from 20,000 to 25,000 acres. The former figure is about half the 1921 area, but it should be remembered that there was a very large carry-over from the 1920 Irish crop report. Reports state that although the acreage is the record low, the yield prospects are high

S. C. Manufacturers Meet

Greenville, S. C.—The annual fall convention of the Cotton Manufacturers' Association of South Carolina, featured by an address by United States Senator N. B. Dial, the annual report of the President, James D. Hammett and election of officers for the ensuing year, was the chief event Tuesday of the fifth day of the Southern Textile Exposition now drawing to a close at Textile Hall.

President Hammett, president of the Orr Cotton Mills at Anderson and one of the state's best known mill men was reelected president of the association while Robert W. Sullivan, secretary and treasurer of the same mill was again chosen to serve the association in a similar capacity. Emslie Nicholson, president of the Monarch Mills of Union was elected vice-president. The following six men were elected as members of the executive committee: J. H. Morgan, Spartanburg; Dr. H. A. Ligon, Spartanburg; R. B. Pitts, Camden; W. C. Hamrick, Gaffney; J. C. Self, Greenville; Geo. M. Wright, Laurens.

The opening meeting of the convention was held at the Grand theatre at noon when Senator Dial made a lengthy address on the subject of "Relations of Government to Industry." Senator Dial declared that the government should play a veritable game of "hands off" so far as practical in its relation to industry, insisted that his proposed cotton futures act would give the Southern farmer a share in the profits of his toil in growing cotton and took a healthy swing at the Republican regime of one Warren Gamael Harding. A large crowd of cotton mill men from over the state and local citizens in general heard the solon.

The address of President Hammett at the business session of the association held at Cleveland Hall yesterday afternoon was one of the features of the meeting. Mr. Hammett asserted that the industry has just passed through a year of uncertainty but that in most cases the spell has been comparatively well weathered by the mills of the state. The fuel situation has been one of momentary uncertainty during the year and many of the mills have been hard put to remain open. In this connection, Mr. Hammett urged immediate further development of the hydro-electric power of upper South Carolina as the best solution of the situation.

President Hammett's Address.

The textile industry in South Carolina, representing close to 200 establishments scattered chiefly over the Piedmont area during the past year has been passing through another lap of the economic depression following in the wake of the World War, according to President James D. Hammett, of the Cotton Manufacturers' Association of South Carolina, in his address before the annual fall convention of the association here Tuesday. The mills in this state, Mr. Hammett said are weathering the storm in comparatively good fashion.

During the year the mills have almost all been in continuous operation, have supplied work and a living for 15 per cent of the white population of the state. Wages have not been cut during the period and the mills have been gradually getting back toward a normal basis of operation.

Mr. Hammett's address, which by resolution passed at the convention yesterday will be printed and circulated throughout the state, follows in full:

"The twelve months covered by the fiscal year of your association has been one of uncertainty to all manufacturers and the time has been used largely in holding organizations together and with every effort to give employees the maximum of employment so as to avoid suffering among our people as best we could. As a period for earning dividends we cannot truthfully point with pride to results; yet we, as one of the large industries employing thousands of men and women do take pride in the fact that we have demonstrated our earnest effort to manage so that the men and women (120,000 employees and dependents on employees and representing 15 per cent of the total white population of the entire state) should have an opportunity to earn a sufficient sum to avoid suffering and to enjoy many of the luxuries of life. As an association we have, through our committees, been active, and of great benefit to the industry, and I cannot too strongly urge upon members the importance of giving loyal and active support to every branch of the association work. It is not my purpose to discuss in detail the activities of the various committees, but rather leave to the committee reports the interesting facts of their activities and briefly call attention to a few subjects that occur to me as being of sufficient importance to demand the attention of all the associations' members, and, to some extent, the public at large.

"Labor has been abundant, and at the moment the indications are that more labor will be available than can be economically used. This condition has been, to a large extent, brought about because of the ravages of the boll weevil added to an unfavorable growing season. While it is pleasant to have available an abundant labor supply we must not overlook the fact that the migration of the farmer to the mills will ultimately result in a lessened cotton acreage in the immediate vicinity of the mills, and that an additional quantity of cotton will have to be brought to the mills from distant markets with the added freight charges to be carried in the cost sheets. Labor has been more active and effective in producing a maximum of production, and in many cases have grasped the idea that mills were operating with practically no profit at all, consequently the thinking element of employees have been disposed to add their energies, whenever possible,

to assist in making possible the unbroken operation of the plants. The wage scales have not been changed during the year, though business was unprofitable. While our friends and competitors of the East have been through an unpleasant labor disturbance, the thinking Southern operative has realized that Southern mills furnish comfortable homes at a rental that will not exceed twenty-five per cent of the rental for homes at many Eastern mill centers, and, in addition, are furnished fuel at cost, and often at a loss to the mills, and that sentiment has not been altogether discarded by the Southern mill officials, but, on the other hand, a sympathetic feeling and often an affectionate regard exists between the executive and the employee. Employees, being American born almost to a man, and with the management of the same flesh and blood, we trust and believe the thinking element would resent any activities on the part of agitators whether from across the seas or from sections of the United States where conditions are entirely different from the conditions existing in Southern mill centers. Comfortable homes, often with free water and sewerage connections, exist in our mill communities, yet, the mill management is alive to the comfort of the employee and a distinct disposition is evident to improve the class of homes in the mill communities.

"The transportation committee is so distinctly able that I feel it would be presumptuous for me to discuss that question other than to suggest that the success of the industry depends to a great extent on effective and reasonably cheap transportation of that which we buy and sell. As an industry we join with all industry, as well as agricultural interests, in deprecating a condition which permits the dictates of a few men to destroy the opportunity of all the people to do business one with the other, and to prevent the American people from securing commodities from a distance which are necessary to the comfort and happiness, yes, even the lives of American men, women and children. We urge the adoption of a policy that is broad in its every aspect, fair in its treatment of both capital and labor, non-partisan in its administration, to the end that uninterrupted traffic between the states may always be enjoyed.

"The question of power, whether electrical or steam driven, is of paramount importance to the industry. The fuel problem is dependent oftentimes on labor conditions in the coal fields, and as has recently been the case, considerable embarrassment has been felt by many mills. And we have suffered the unpleasant experience of having contracts made in good faith ignored, and exorbitant prices for coal charged to mills who had to "stand and deliver," or else close their plants, and leave without employment and the means of earning a living large numbers of industrious men and women

who should not be subjected to such hardships as is now possible. As an antidote I strongly urge the powers in control, and the people generally, to give such consideration as will insure a gradual development of sufficient electrical energy as to operate all the industries of our state, and relieve the uncertain and unhappy conditions existing because of our dependence on the coal fields and the transportation lines.

"The chairmen of the Legislative and Taxation committees will report to you in an interesting way. Another decided movement was made to enact a 48-hour labor law at the last session of the legislature, and while the bill was passed in the house, the senate wisely substituted a 55-hour bill, which became a law. As an industry we condemn the disposition to place the textile interests of South Carolina in position where competition with our competitors of other state would be difficult, if not impossible. Massachusetts alone has a 48-hour law for its textile interests, and it is a notorious fact that extension of the textile industry in New England is no longer thought of. The thinking element of the employees in South Carolina mills joint with the management of the mills in urging that we be left to conduct our business without further restrictions, and that sentiment be changed so as to secure a continued extension of the textile interests in the state, to the good of the state and all its people. Taxes are burdensome, and sometimes must be done or else South Carolina will be compelled to sit idly by and see other states forge ahead because industries are given more considerate treatment. It must not be understood that the textile interests are opposed to an educational system, or to a good roads movement or to amply caring for its unfortunates, for we are sincere and earnest in our support of all. We do, however, urge that economy that will not interfere with efficiency be practiced and that we be not called upon to carry such an undue proportion of the burden.

"There has developed a sentiment among a class, and certainly among the ignorant class, that is antagonistic to corporate wealth. They who are ignorantly opposed to corporations are unable to justify their opposition, and are not in condition to realize the lamentable condition in which our state would find itself if the corporations, viz: the railroads, the cotton mills, and other corporate organizations were removed from the state and welcomed, as they would be, in sister states. It is a reflection on the intelligence of a people to antagonize and seriously injure, if not destroy, an industry that furnishes honorable and lucrative employment to 15 per cent of the white population of the state, pays its full share for the education of the youth of the state, and the upbuilding of the highways of the state, and in every way adds its full quota to the wealth and happiness of all the people of the state.



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Washington.—E. T. Pickard, chief of the Textile Division, in a cablegram to the Bureau of Foreign and Domestic Commerce, made public here, declares that with the possible exception of England, workers in mills throughout Europe are turning out less per unit than in pre-war days. Mr. Pickard points out that labor is at present reduced to an eight-hour day and is "independent." While mills abroad are producing slightly finer counts and weaves, he emphasizes the fact that in light of the ever-changing conditions, European cotton consumption will continue for some time below pre-war averages.

"The immediate outlook of the German cotton manufacturing industry," the cablegram declares, "is not promising, and although some mills are booked with orders until the end of the year, many others have raw cotton on hand for only five or six weeks. German export prices, adjusted semi-officially to a European competitive level, together with the inability of manufacturers to quote firm prices, assure stipulated delivery, and maintain quality, are likely to preclude Germany as a factor in the world's textile markets for some time.

Orders Unsatisfactory.

"New domestic and export orders are unsatisfactory, and there is insufficient operating capital to run mills economically as the result of depreciated currency, making purchases of raw material difficult. This will soon cause many mills to curtail to part time operation. The popular impulse to exchange depreciated marks for staple commodities is sustaining the German cotton industry, but at present partial failure of domestic purchasing power to reach new price levels is materially affecting production. It is reported that neighboring continental countries are taking advantage of the low price paid German labor by supplying German mills with yarn and gray cloth and having them re-ship the finished product. As a result, imports of yarn and cloths are greatly exceeding exports. The recent Leipzig Fair revealed that sellers were hesitant to quote and buyers to accept prices for future delivery, but despite this the small available stocks of cotton goods was readily sold. Stocks of raw cotton at Bremen are much lower than those of a year ago, cotton afloat on September 9 being only 20 per cent of that afloat last year. Bremen, it is estimated, handled about 1,500,000 bales during the year ending July 31, more than half of which was trans-shipped to other European countries.

English Cotton Trades.

"Movements in the cotton textile trades of England have not materially improved of late. Vacation periods, combined with falling prices of raw material, has recently caused an unusually dull situation in Lancashire. Yarn prices have followed cotton with cuts of one-quarter pence to one-half pence per pound being made. British spinners are particularly slow in filling orders in the section using American cotton. Pessimism continues to exist. Weav-

ers working only on part time are uneasy, as foreign movements are much retarded. Spinning is in worse condition than than weaving and many spinners are taking business at a loss rather than close down. On account of the unsatisfactory situation of spinners using American cotton, a proposal has come forth to revive cotton control such as was exercised during the war, whereby production is limited to the interests of the whole trade and concerns which are either temporarily stopped or injured by the control compensation. A persistent feeling prevails, however, that this proposal will not be adopted as the trade prefers to rely on improved foreign demand and on a gradual reduction in costs of production. Export orders are not large, but Indian buying is improving.

"The textile industries of France are working full time and there is apparently no lessening in the demand for their product. In all sections, but especially among the spinners and weavers, there is optimism. Spinners are booked for two to four months in advance and have covered their raw cotton obligations while weavers will be busy until January. While the French industry is prosperous and working full time, this prosperity has been consummated mainly by reduced production resulting from shorter hours of labor. Wages of operatives are still more than 400 per cent above pre-war level but have brought about a higher standard of living and this has caused a demand for goods of finer weaves.

Swiss Industries Cautious.

"The Swiss textile industries are cautious and although the majority of cotton spinning and weaving mills in Switzerland are now working on orders which will carry them through October, November and December, opinion is rife that duller times are forthcoming. Much cotton is being imported by Swiss merchants from America via Antwerp, and there is a substantial export trade in cotton yarn with Germany while good qualities of finer yarn 60s-200s. are coming from England. The Swiss market for fine cotton goods is very active at present, large quantities of gray goods arriving from England to be finished.

"Italian cotton mills have orders for several months ahead. There is a fairly steady hand to mouth business for domestic consumption, and while exports are below pre-war, activity exists for foreign shipment. Production is below pre-war for several reasons: hours of labor have been reduced from ten and eleven to eight; domestic consumption is running to finer counts; exports, mainly in the coarser counts, have fallen off; and the draughts of last autumn caused curtailment of operations. Weaving mills were generally willing, up to a short time ago, to obligate themselves for a month or two ahead notwithstanding uncertainty in the world cotton situation, but now they are exhibiting narrow commitments and conducting their operations more on a basis of short time delivery. In staple commodities mills are running on goods which are sold either



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THURSDAY, OCTOBER 26, 1922.

Meeting of Southern Textile Association.

The surprising features of the meeting of the Southern Textile Association at Greenville, S. C., last Friday and Saturday were the unexpectedly large attendance at the Friday afternoon session, and the small attendance at the Friday night banquet.

The first session was called to order by President John W. Clark at 2:30 p. m., in Cleveland Hall, with every seat taken, and as more men arrived additional seats had to be brought in.

As the mayor of Greenville did not appear to deliver the address of welcome, J. S. Stroud was not able to deliver his response, but we are publishing elsewhere the one he intended to make.

President Clark did not make any set address but spoke briefly of the work of the Association.

W. H. Gibson, Jr., chairman of the Weavers' Division made a report of the recent meeting of his division at Anderson, S. C.

W. H. Moseley made a report for the Committee on Cloth Standards. His report was received as information and action deferred until the next meeting.

An hour having been set aside as the program for the discussion of inventions and improvements the following took part in that portion of the program:

J. S. Stroud, of Cooleemee, N. C., described an attachment made by a young man in his mill by which spinning ring rails are automatically stopped and wound down.

W. W. Cobb, of Catechee, S. C. told of his system of distributing cotton to lappers.

C. L. Upchurch, of Athens, Ga. exhibited a machine for splicing tire fabric yarn.

T. A. Sizemore, told of several inventions at the American Spinning Company, including a split hub for loom pulleys.

The Banquet.

The Southern Textile Association banquet was held at 6:30 Friday night at the Episcopal Church Parish House with about two hundred present.

David Clark acted as toast master while L. P. Hollis was very effective as a song leader.

F. Gordon Cobb and H. H. Boyd, president, John W. Clark, president; J. A. Chapman, Jr., vice-president; A. B. Carter, secretary, and T. A. Sizemore, treasurer, were introduced and made brief talks.

G. F. Escott was introduced as one of the organizers of the Southern Textile Association.

Dr. D. W. Daniels, of Clemson College, S. C., pleased his audience with one of his humorous lectures
Saturday Morning.

The Saturday morning or "Better Goods" session was called to order at 10 o'clock in the Opera House.

L. L. Brown, of Clifton, made a very practical talk upon "The Relation of the Lapper Room to Better Goods."

J. B. Harris, of Greenwood, S. C., followed with a talk on "The Relation of the Spinning room to Better Goods."

W. B. Williams handled in a very practical manner his subject, "The Relation of the Weave Room to Better Goods."

A discussion followed, the leaders being J. V. McCombs, L. E. Wofford, W. P. Lester, T. N. Crocker, H. H.

Boyd, J. B. Harris, L. S. Cannon and C. C. Brigman.

H. W. Moseley, of Greenville, S. C., made a very interesting talk illustrated by a black board talk upon the subject, "The Relation of the Cloth Room to Better Goods." He outlined the position of the cloth room man and received many congratulations upon the manner in which he handled his subject.

The meeting voted to lease the to the officers the selection of the next place of meeting but a considerable sentiment for Augusta, Ga., was expressed.

Luther McBee Made Arrangements for Meetings.

The thanks of the members of the Southern Textile Association are due Luther M. McBee, Jr., for the work he did in making arrangements for the meeting of the Association and for the banquet. Being the only Greenville man on the arrangement committee Mr. McBee had to make all the arrangements, but did so in a very efficient manner in spite of the large amount of work required.

A Letter to Maine.

Charlotte, N. C.

Editor,
The Evening Express and Advertiser,
Portland, Maine.

Dear Sir:

A friend has forwarded us a copy of a recent issue of your paper containing a story relative to a young man from South Carolina who, accompanied by two negroes and riding in a rattle-trap car, stopper for a while in your city.

We have no interest in the story other than the last paragraph which was as follows:

"Textile operatives of the Northern state made a very favorable impression on the South Carolinian. 'They look fresh,' he said, 'but down our way they start work in the mills when they are eight or nine years old, and a few years later they are all bent over and look like old men.'"

Knowing your large circulation we are afraid that the people of your section would accept as true the statement, believing that it was made by a man familiar with conditions but we wish to call their attention to the following facts.

The laws of South Carolina have for a number of years prohibited the employment of children of less than 14 years, in factories and the State has a rigid system of inspection to see that the law was in force.

For three years prior to May, 1922, the Federal Child Labor Law was in force and their inspectors also visited the South Carolina mills regularly.

Under these circumstances any fair-minded man will admit that it would be impossible for South Carolina cotton mills to employ children of eight or nine years of age, even if they desired to employ them which they do not.

The tourist who was in your midst was just a common liar.

We believe that you will not object to publishing this letter to counteract the impression that he created.

Yours very truly,

Southern Textile Bulletin

The Exposition.

Having published in our last issue a description of the exhibits in the Southern Textile Exposition and having published in advance a list of those who expected to attend, there remains little to be said about the Exposition except that it was a distinct success.

The Fifth Southern Textile Exposition was better arranged than any of the others and the exhibits were uniformly good although there were very few new things shown.

The attendance on Thursday, Friday and Saturday was very large, but the large attendance of the mill presidents and treasurers which was expected on Monday, Tuesday and Wednesday failed to materialize, and the total attendance of mill officials was far less than expected.

The exhibitors were, however, well pleased with the total attendance and many of them reported considerable business transacted.

The Southern Textile Bulletin Booth was very fortunately located and we were favored by a very large registration of mill men.

Every few hours a bulletin was sent out from our booth giving the names of the mill men present and that service was greatly appreciated by the exhibitors.

We have applied for the same space in the 1924 Exposition and we learned that a great many exhibitors also filed application for space.

The textile machinery and supply men of Greenville were on the job every minute and did their utmost for the visitors and to make the Exposition a success.

Our Pure Corn Likker Editorial.

While at the Southern Textile Exposition we heard numerous comments upon our recent editorial on "Pure Corn Likker," in fact, it seemed to be one of the features of the Exposition.

Hundreds of mill men and machinery men commended it, while a few of those who had anticipated filling their prospective customers with corn liquor, made caustic comments upon our exposure of the filthy manufacture of their beverage.

We are informed that the representative of one of our New England competitors ran around showing the editorial to everyone as "the only kind of stuff Dave Clark can write," but we have no apology to make to anyone.

We have no objection to his efforts to carry favor with the "liquor hounds" for we know that an overwhelming majority not only of the mill men but the machinery and supply men stand with us on that proposition.

We are advocates of decency and soberness at the meetings of the Southern Textile Association and as usual we expressed our views without expecting them to please everyone.

Personal News

J. M. Kelly, of Ozark, Ala., has become overseer carding at the Lauderdale Mills, Meridan, Miss.

William Christian has resigned as superintendent of Appalachian mills Knoxville, Tenn.

F. F. Ferguson has resigned his position as overseer carding at night at the Avon Mills of Gastonia, N. C.

J. R. Ogburn has become overseer of carding and spinning at the Beaver Cotton Mills, Thomson, Ga.

W. E. Hammond has resigned as superintendent of the Mills Mill, Greenville, S. C.

C. W. Walls is now overseer carding at night at the Grace Mills, Rutherfordton, N. C.

J. W. Sisk is now night assistant superintendent of the Grace Mills, Rutherfordton, N. C.

J. C. Pressley has been appointed overseer carding at Adams Mills, Macon, Ga.

Robert A. Whalley has resigned as superintendent of Lafayette (Ga.) Cotton Mills.

Edward Swords has returned to his former position as overseer spinning Adams Mill, Macon, Ga.

Charles L. Hammock, superintendent Walton Mill, Monroe, Ga., died on October 16 and was buried in Griffin, Ga.

Cameron Lanier has been appointed superintendent of Piedmont Cotton Mills and Egan Yarn Mills Egan, Ga.

D. S. Sanders, of Patterson, N. C., has been promoted to night overseer of winding at the Grace Mills, Rutherfordton, N. C.

O. L. Derick, of Atlanta, has accepted the position of overseer No 1 spinning at the Winnsboro Mills Winnsboro, S. C.

G. A. Pope has been promoted to overseer spinning from overseer of winding at the Grace Mills, Rutherfordton, N. C.

B. B. Gossett has resigned as president of the Panola Mills, Greenwood, S. C., in order to devote more time to his other mill interests.

J. P. Abney, president of the Grendel Mills, Greenwood, S. C., has also been elected president of the Panola Mills, of the same place.

C. W. Parrott, of the P. H. Hanes Knitting Co., Winston-Salem, N. C., has accepted the position of overseer of carding and spinning and assistant superintendent at the Arcadia Mills, Arcadia, S. C.

Steve M. Crolley from Winnsboro, S. C., has returned to his former position as second hand in spooling and warping room of the Darlington Manufacturing Company, Darlington, S. C.

J. F. Devinney, of the Savona Mills, Charlotte, N. C., has become assistant overseer carding at the Johnston Manufacturing Company, North Charlotte.

P. McGarrity has resigned as overseer carding and spinning at the Arcadia Mills, Arcadia, S. C., to become superintendent of the Mills Mills, Greenville, S. C.

M. E. Powell has resigned as second hand in weaving at the Miller Cotton Mills, Waco, Texas to become overseer weaving at the Brazos Valley Mills, West, Texas.

R. A. Whalley has resigned as superintendent of the LaFayette Cotton Mills, LaFayette, Ga., after having held that position for 11 years.

J. H. Bagwell has been appointed salesman in North Carolina and South Carolina territory for the U. S. Oil & Supply Company, Providence, R. I.

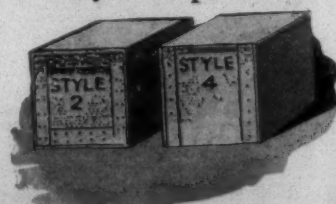
J. B. Harris, superintendent of the Greenwood Cotton Mills, Greenwood S. C., has been elected vice-president and a member of the board of directors of the Ninety-Six Cotton Mills.

E. L. Sord has resigned as overseer spinning at night for the Union Mills of the Consolidated Textile Corporation of Lafayette, Ga., to become overseer of spinning for the Adams Mill, of Macon, Ga.

A. B. Brown has resigned his position as general second hand in carding at the Mason Mills, Kings Mountain, N. C., and has accepted position as overseer carding at night at the Avon Mills, Gastonia, N. C.

The many friends of L. L. Hurley, overseer of carding at the Standard-Thatche-Coosa Company, Chattanooga, Tenn., will learn with much regret of the death of his wife which occurred recently at their home in Chattanooga. Mr. and Mrs. Hurley formerly lived in North Carolina and both had wide acquaintance among the mills in this section.

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MILL NEWS ITEMS OF INTEREST

Athens, Ga.—Fire which was discovered at the Maillison Braided Cord Mills here late Saturday afternoon resulting in a \$150,000 loss. Two buildings were completely destroyed. L. F. Edwards, president, and Julian S. Goetchius, secretary declared the plant will be rebuilt on more modern lines immediately.

Fort Worth, Texas.—Roscoe Ady, industrial commissioner of the local chamber of commerce, announces that a cotton mill to manufacture coarse fabrics may be established here in the near future.

He says a Philadelphia cotton broker and a manufacturer from South Carolina are to visit Fort Worth soon to investigate to proposition.

Union, S. C.—Directors of Union Buaflo Mills Company, at a meeting in New York declared on the first preferred stock of the company the regular semi-annual dividend of 3 1/2 per cent, payable November 13, to stockholders of record of November 8, and also declared on the second preferred stock to stockholders of record on same date a dividend of 35 per cent, on account of accumulated or cumulative dividends, also payable November 15.

Danville, Va.—That the Dan River and Riverside cotton mills are using forty and fifty million pounds of raw cotton every year is the statement made here by H. R. Fitzgerald, president of the local organization replying to a speech made at a

meeting of the Rotary club by M. O. Nelson who expressed the belief that Danville will sell between forty and fifty million pounds of tobacco this season. Mr. Fitzgerald's figures were the first given publicly showing the great increase in the organization's capacity in the past few years.

Columbia, S. C.—The Langley Cotton Mills in Aiken, county lost their fight in the supreme court of South Carolina against an order of Circuit Judge Hayne F. Rice, directing them to place all their records and correspondence at the Langley office, for the inspection of stockholders. The supreme court issued an opinion refusing to reverse the order of Judge Rice, which was issued upon request of J. C. Self, et al, stockholders, who alleged that some of the records referred to were

in New York. These must be returned to the mill office, it was ordered.

Parkersburg, W. Va.—The National Woolen Mills have voted to increase their capital stock 5,000 shares and will offer a portion of the stock to local investors. The 5,000 shares will be 8 per cent non-assessable, non-taxable, preferred stocks, \$100 par value, redeemable in five years at \$120 and 2,500 shares of common stock, no par value.

The directors have adopted two new policies. One is equipping all branch stores with ready-made suits and overcoats, which are to be made in the factory of the company during dull seasons and to be marketed at the same price as tailor-made garments. The other is to establish roadmen throughout the United States on a commission basis.

Greenwood, S. C.—J. P. Abney president of Grendel mills was elected president and treasurer of Panola Cotton mill to succeed B. B. Gossett, of Charlotte, who tendered his resignation, at a meeting of the directors. Mr. Gossett has served as president of the Panola mill for about a year, having accepted the position upon the urgent request of the creditors' committee. At that time he was living in Anderson. Since moving to Charlotte to take the presidency of the Chadwick-Hoskins mills, he has requested that he be relieved of the management of the local mill, it was stated.

Under the direction of Mr. Gossett, the mill has shown a profit and he leaves it in excellent condition. The directors formally thanked him for his services. He also resigned as a director and was succeeded by H. T. Crigler, of Greenville. The following now compose the board of directors: J. P. Abney, H. T. Crigler, W. S. Manning, Spartanburg; J. S. Turner, New York; C. D. W. Halsey, New York.

Altavista, Va.—Decision to double the capacity of the Altavista Cotton Mills, of Altavista, Va., at the cost of approximately \$400,000 was reached at a meeting of the stockholders held here, it was announced by C. J. Ashmore, assistant general superintendent of the mills.

Additional stock to the amount of \$300,000 common and \$100,000 preferred will be issued by the mills making the capital stock of \$500,000 and \$250,000 preferred, according to Mr. Ashmore. None of the additional stock will be placed on market, however, it being understood that the present stockholders will purchase the entire issue.

The mill will be doubled in every department and 35 new houses built on the property, Mr. Ashmore said. This expansion will entail the installation of 300 additional looms and proportionate increases

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in the carding and spinning rooms, according to the plans.

Particular interest is attracted by the announcement in view of the fact that it is one of the manufacturing plants in the south which turns out an exceedingly fine construction of goods.

Double Capacity Franklin Process Company.

Greenville, S. C.—As a result of a large increase in the demand for the dyeing of cotton goods here, work has commenced on the construction of a new dyeing house at the plant of the Southern Franklin Process Company, near Greenville, which, when completed and equipped will double the capacity of the dyeing plant of this company. The improvements will cost approximately \$50,000. The contract for the construction has been awarded to the J. F. Gallivan Building Company, of this city.

The Franklin Company has been operating here for only about ten months, and the large increase in business is gratifying to officials and stockholders of the company.

Development of Cotton Manufacturing in the South.

The remarkable development of the cotton mill business in the South during the past few years is one of the most outstanding achievements of the present generation. The Manufacturers' Record gives these facts.

The South now has \$350,000,000 invested in cotton mills, which consumed last year 3,733,000 bales as compared with 2,478,000 bales for the rest of the country.

The development of this industry from 180 mills in 1880 with \$21,976,000 capital to 970 mills with \$850,000,000 capital at present, is one of the romances of American industry.

The Southern cotton mill has been a great missionary to the operatives, who before the coming of the mills were without employment. These mills have created profitable employment; they have inspired with new life not only operatives but millions of others. In proportion to the wealth and newness of this industry they have done more for the educational, religious and moral advancement of their employes than any other great industry in this or any other country. They have built splendid schools often operated wholly at the expense of the mills; and great Y. M. C. A. and Y. W. C. A. buildings; they have laid out attractive towns and built dwellings equipped with all modern improvements and rented them at nominal cost.

The operatives in these mills are almost all native Americans of the purest Anglo-Saxon stock in the world. They have developed an initiative and self-reliance and ability to do expert work which makes them pre-eminently today the greatest potential power for cotton mill advancement to be found in this or any other country.

Following the cotton mills will come textile machinery plants and a varied line of manufacturers which inevitably develop around this great industry when once firmly established, as the cotton industry now is in the South, and this will spread to every other line of human activity.

There is still room for an enormous gradual expansion of the cotton mill industry in the South and the Southern Textile Exposition which opens in Greenville, S. C., will help to concentrate the thought not only of America but of other countries upon the achievements which have been made and of the certainty that this section is predestined as the cotton manufacturing center of the world.

Textile Employment Rises in September.

Washington.—Increased employment in the textile industries generally is indicated in the monthly employment survey made public by the Bureau of Labor Statistics, U. S. Department of Labor. Among the 42 industries surveyed for September compared with August the following showed increases of employment in the percentages indicated: Chemicals, 2.8 per cent; men's

clothing, less than one-tenth of 1 per cent; women's clothing, 3 per cent; cotton finishing, 11.2 per cent; cotton manufacturing, 5.3 per cent; millinery and lace goods, 4.9 per cent; shirts and collars, 1 per cent; silk, less than one-tenth of 1 per cent; woolen, 11 per cent, and carpets, 7 per cent.

The only textile industry showing a decrease in employment was the hosiery and knit goods, for which 100 mills reported at total decrease in employment of 3.2 per cent. The men's clothing industry for which 102 establishments reported increased employment from 37,132 to 37,143. At the same time total payrolls in the establishments decreased 1.7 per cent, the figures show.

The report made public today gives figures, for the first time in several months, for the woolen industry. At one time the bureau was forced to discontinue reporting this industry because of the fact that the American Woolen Company discontinued sending data to Washington. Eighty establishments are reported for the woolen industry, employing 41,588 workers for September, an increase of 11 per cent. The total payroll was \$906,616, which was an increase of 11.4 per cent compared with August. It is understood the figures obtained were through the cooperation of the Massachusetts State Board of Statistics.

Wage changes in the textile industries are indicated in the following comparison of per capita earnings in September last with those in August:

Carpets, 5.1 per cent increase; cotton finishing, 3.8 per cent increase; millinery and lace goods, 2.5 per

cent increase; cotton manufacturing, 3.3 per cent increase; woollens, 5 per cent increase, chemicals, decrease of less than one-tenth of 1 per cent; women's clothing, .9 per cent decrease, silk, 1.2 per cent decrease; men's clothing, 1.7 per cent decrease; hosiery and knit goods 1.8 per cent decrease; shirts and collars, 2.4 per cent decrease.

Compared with September, 121 employment in the textile lines greatly decreased in September last, percentage drops being as follows: Men's clothing, 14.3 per cent; cotton finishing, 4.1 per cent; cotton manufacturing, 16.7 per cent; hosiery and knit goods, 2.4 per cent; silk, 15.6 per cent, and woolen, 14.6 per cent.

Total payrolls by the same comparison decreased 21.9 per cent in men's clothing; 8.4 per cent in cotton finishing; 18.4 per cent in cotton manufacturing; 1.9 per cent in hosiery and knit goods; 20.7 per cent in silk, and 7.4 per cent in woollens.

Report of Committee on Cloth Standards.

Greenville, S. C.,

To the Officers and Members,
Southern Textile Association:

At a meeting of the Weavers' Section, held at Anderson, S. C., the Chairman, Mr. W. H. Gibson, Jr., appointed this committee, consisting of H. W. Moseley, Chairman, Greenville, S. C.; Mr. H. H. Boyd, of Charlotte, N. C., and Mr. J. M. Alexander, of Newry, S. C., for the purpose of determining what constitutes a legal piece of cloth, as to number of ends in warp.

This committee met at Greenville, S. C., September 16, 1922, and after a full discussion, we beg to offer the following:

"This committee recommends that the number of ends per inch times the width in inches of a piece of cloth of a given construction be a legal piece of cloth."

Mr. W. H. Gibson, Jr., met with this committee, and this committee wishes to thank him for his interest and help.

This committee respectfully asks that you allow them to make the following recommendations:

- That the President appoint a committee to recommend a standard as to variations in width.
- That the Association elect a recording secretary for the purpose of collecting and preserving the records of the Association.

Respectfully submitted,

(Signed)

H. W. MOSELEY, Chm.,
H. H. BOYD,
J. H. ALEXANDER.



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WEIGHTING COMPOUNDS FOR COLORED AND WHITE WARPS.

FINISHING COMPOUNDS FOR ALL CLASSES OF FABRICS.

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The Strength of Cotton.

(By E. Dean Walen, Cotton Research Co., before National Association of Cotton Manufacturers.)

The study of textile manufacturing leads ultimately to a desire to know what happens to cotton during manufacturing, and to be able to follow the change in physical prop-

erties with each machine, and to know more about the properties of cotton which are of greatest importance. In this connection it is difficult to duplicate the human senses and to find mechanical means which will judge cotton as quickly and as accurately as can be done by a cotton classer. It is, however, desirable to reduce classing to a mechanical certainty in order that we may all understand each other in discussing experimental work and in order that we may be assured that our machinery is best treating cotton presented to it.

This discussion in no way is intended to treat exhaustively of cotton, but merely to present for your consideration some progress which have been made along these lines.

One of the important properties of cotton is strength, for it not only has a bearing upon production, but in many cases determines the value of a material. When the strength of cotton is considered it is usually not thought of in terms of individual fibres, but more particularly as a group of fibres resisting certain mechanical forces such as are present in the manufacturing and in the use of the material. The determination of the strength of individual fibres is tedious, difficult and the time necessary to make a sufficient number of breaks, together with the uncertainty of attempting to predict the number in a cross section, is so great that it seems hardly desirable to use such a method.

The products of textile machinery are known in terms of hanks, yarn numbers, etc., which are based upon the weight of a unit length of the product. If, therefore, a method of testing the strength of fibres could be devised which used a certain weight of fibres of a known length the result could then be expressed in terms of yarn number or hanks such a method would automatically assign the proper number of fibres in proportion to any one yarn or sliver and the answer would be free

from the uncertainties of calculating the number of fibres in a cross section. If cotton fibres were uniform in their shape or cross section and in density, the calculations would have some degree of accuracy. It is also desirable to obtain a method which is easy to perform and which tests enough fibres to assure a reasonable accurate determination.

After some considerable experimental work the following method was devised:

The method consists of taking an ordinary pull of cotton, such as a classer would take, and working it back and forth to obtain an untangling of fibres. The short fibres are then brushed out. The brushing operation accomplishes the purpose also of straightening the fibres. The atmosphere and the cotton should be quite moist during this operation. The bundles are then cut to length of seven-eighths of an inch, which gives ample assurance that the fibres are of the same length and that the body of the cotton is tested. In the case of cotton shorter than one inch it is necessary to use a shorter length of cut.

At this point the bundles are allowed to condition in a constant atmosphere, and are then weighed in groups of five or ten, depending upon the number made for each sample of cotton.

These samples would be difficult to place in the jaws of a testing machine, and to overcome this the ends of the bundles are smoothed out and cemented with collodion on a piece of paper. This makes it convenient to handle and to expose the samples before testing. The paper strip is then cut parallel to the test specimen and the specimens clamped in the jaws of the testing machine, and the paper is again cut, this time perpendicular to the specimen.

The testing machine is the conventional type of inclination balance

such as is used for testing single yarns, and it is operated in the same manner.

Many of the fibres break near the jaw, which may be natural, due to the fact that the fibres are not of uniform section but are tapered, and there is no reason to expect the fibres to break at the center.

The testing machine has a capacity of ten pounds, and is operated with the lower clamp traveling at the rate of 12 inches per minute. The initial distance between jaws is one-half inch. The average weight of five individual bundles is .020 grams.

In expressing the results, the sum of the strengths is divided by the sum of the weights, which reduces the figures to the strength of a group group of fibres 7-8 inch long and weighing 1 gram, which is then readily corrected to a yarn number or a figure which is the equivalent.

The previous work on cotton strengths impresses one with the fact that the longer cottons are finer, and weaker, but there are more in a cross section and hence

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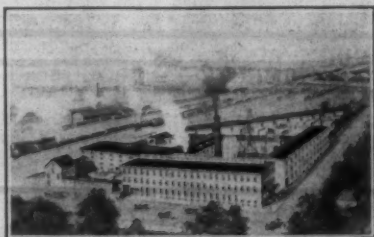
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the yarn strength is greater. With this method of testing the longer cottons are stronger, or an equivalent weight is stronger.

It is interesting to know something of the influence of the cotton strength upon the strength of a yarn having the same manufacturing operations and the same twist. No doubt it would be more interesting to know the effect with varying twists, but presumably such will be the case at some later date.

A series of tests was made in spinning a 28.5 yarn from several lengths of cotton. The yarn strengths were determined with a moscrop tester and represent the average single end break. Great care was taken to obtain constant humidity conditions throughout the manufacturing test and breaking tests. The moscrop is not generally well thought of, but we have found it a good machine, providing it is well taken care of, and it is possible to make a great many determinations in a comparatively short time.

The tests appear to indicate that the lengths in themselves have no material influence upon the strength except in a very general way, but that the yarn strength is directly dependent upon the cotton strength. The average values appear to be consistent, but the individual results show the influence of other factors and especially around the lower cotton strengths which produce yarns stronger than the original cotton. This is comparatively easy to account for, but is very difficult to predict, and will be partly discussed under the influence of processes. It is probable that the difference in the test methods used in testing cotton and yarn may account for some of the difference.

Belmont, N. C.—At the meeting of the stockholders of the Majestic Mills and the Climax Spinning Company, the affairs of both companies were shown to be in excellent condition and dividends of 10 per cent were declared upon the stock of both mills.

September Egyptian Cotton Trade. Indian Demand for American Gray Goods.

September exports of Egyptian cotton were 24,000,000 pounds. Imports totaled 26,000,000 pounds and stocks on hand on September 30, 135,000,000 pounds. The harvesting of the Egyptian crop is proceeding rapidly, ginning is in progress, and shipments are already arriving in Alexandria. In Lower Egypt both the total yield and yield per acre are below average. In Upper Egypt the total crop is below average. (Cable from Consul Lester Maynard, Alexandria, October 9.)

Arabian Market for American Webbed Belts.

A demand exists in Arabia for American webbed belts. The market for these belts may be divided into two classes. The first, and by far the largest, is the main class of natives who prefer color, plenty of shiny metal, and pockets attached to the belt. The second class consists of natives employed in the government offices; they prefer a white or black article with a detachable and easily polished buckle and one which has no pockets. [A list of Aden merchants interested in belts may be obtained from the Textile Division.] (Consul Raymond Davis, Aden, September 13.)

American Cotton Goods in Ceylon.

Efforts made toward extending American cotton goods in Ceylon should prove profitable, according to Consul Marshall M. Vance, Colombo. American manufacturers have never succeeded in capturing a large share of the Ceylon cotton-goods market, and the percentage of imports entering Ceylon from America since the war is less than it was before. Most of the imports are gray piece goods, though smaller amounts of bleached and dyed piece goods are also imported from American sources. In 1921, out of a total of 25,000,000 rupees, American exporters supplied 280,000 rupees' worth.

Sulphur Fast Olive Green.

H. A. Metz and Company announce that they have placed on the market a new Sulphur Green, which is known to the trade as Sulphur Fast Olive Green.

This is one of the fastest Sulphur Green, to light and washing, that has yet been produced in this country, and on after-treatment with Chrome and Copper, which slightly changes the shade, makes it extremely fast to light and washing.

The dye is soluble, and for this reason it can be used on any kind of machine.

Dyeings, product samples, and quotations will gladly be furnished from any of their offices, upon request.

A PURE SALT

MYLES SALT CO., LTD.
NEW ORLEANS, U. S. A.

CHARLOTTE DOUBLE LOOP (HOOK) CARD BANDS

BEST BY TEST

Also Spinning, Spooling and Twisting Bands

When ordering card bands state make of card and size of doffer. With this information we guarantee correct fit, both diameter and length, of any band for any make of card.

SOUTHERN TEXTILE BANDING MILL

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Emmons Loom Harness Company

The Largest Manufacturers of Loom Harness and Reeds in America

Loom Harness and Reeds

Slasher and Striking Combs Warps and Leice Reeds,
Beamer and Dresser Hecks, Mending Eyes, Jacquard
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LAWRENCE, MASS.

Manufacturers of
Spools of Every Description
Speeders, Skewers, Warp and
Filling Bobbins, Twister
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WE SPECIALIZE IN
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Southern Representative

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BALING PRESSES

ALL SIZES FOR ALL PURPOSES

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We guarantee our disinfectant to meet any government specifications. We manufacture them ourselves, and do not fill them with rosin or other cheap fillers. Get our prices. They will surprise you.

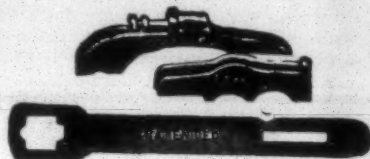
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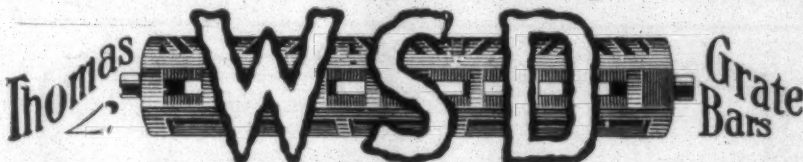
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THE GREATEST IMPROVEMENT MADE IN COTTON SPINNING IN QUARTER OF A CENTURY

The Richards-Hinds Light Running Rolls

Over 1,700,000 Spindles Equipped to Date

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Reduced Cost of Spinning

One-third Saved on Leather Covered Rolls

Better Spinning with Improved Product

All machine builders are agents and will quote prices for new work.
Also for prices and particulars write to

The Metallic Drawing Roll Company
Indian Orchard, Mass.

Invention and the Cotton Industry.

(Continued from Page 12.)

ticle, I should like to direct your attention to that field of endeavor which today perhaps opens up the largest possibility of improvement in machinery—i. e. the introduction of electric drive and its application to textile machines.

I do not think we appreciate the debt which the textile industry owes to the development of electric power. The modern mill with its unit arrangement of motors would not be possible under the old shaft drive conditions. It was one of our own members, Mr. Sidney B. Paine, of the General Electric Company, who first arranged for the introduction of motors in a textile mill, electrifying the Columbia Mills Company at Columbia, South Carolina, in 1894.

In this connection it may be interesting to know that the average capacity of motors operating in textile mills of this country today approximates 1,750,000 horse power.

The application of electric power to the cotton mill has so far taken the direction of arranging for more simple and convenient drive to existing machines. Today the mill can be placed in the most favorable spot, irrespective of power conditions. The South particularly, I think, owes a great debt to the electric motor, owing to the very unsatisfactory character of the water in a great many Southern streams for power purposes, and undoubtedly the growth of the South would not have been so fast had it not been for the harnessing of its rivers in the large power developments.

Power Factor Determines Design.

The thought I should like to leave with you, however, is that even though we may not be able to discover some new principles for the manipulation of cotton fibre may we not look for a change in design of machines whereby the machine will be built around the power factor rather than the power factor around the machine? The variable speed motor which the makers have been testing out for a number of years I believe is about ready, and so one might go on in detail. We are living in the age of invention. The last few years, which have seen the wireless telephone and telegraph radio communication, airplanes, and what not, have prepared us to expect almost the incredible in invention, and it may be that in this most conservative industry the next few years may find new principles which will vitally change our methods of manufacture, and while we doubt it, it may yet be possible to feed the cotton at one end of the machine and cart away cloth at the other.

Future of Cotton Manufacture.

(Continued from Page 13.)

circular loom. It is simple to design a circular loom which will put in 400 or 500 picks per minute. Apparently the only problem is in getting the beat up.

Take the matter of mechanical handling in a cotton mill. We have already equipped three large mills throughout with this system. These have practically been laboratories for the development of mechanical handling in cotton mills, and have

demonstrated the saving in inventory, the decrease of labor, and the increase in production possible with this system.

Just imagine the savings to be made in cotton goods manufacturing by employing the abbreviated process described above and the mechanical handling which has already been demonstrated.

There is plenty of chance for progress in textile machinery development, and anyone interested in the problem must not be discouraged by the idea that it was highly developed one hundred years ago and little progress has been made in the last fifty years.

Discourage "Sea Island" Brands.

Converse & Company have recently sent out a letter to the trade, discouraging the use of the branding of brown sheetings with "Sea Island" when there was absolutely no Sea Island cotton contained in the goods. The letter reads:

"It has been the custom of a number of jobbers and some of our mills in the past to use a brand of Fine Sea Island on certain grades of brown sheeting. We feel that this is misleading, as it conveys the idea that the goods are made of Sea Island cotton when they are not. The Government has enacted stringent laws on misbranding, and the Federal Trade Commission has gone after a number of concerns for misbranding their goods, and we are of the opinion that the custom of branding brown sheetings, "Fine Sea Island" should be discontinued, as it is only a question of time until those mills which are doing it will get into trouble.

"Several years ago we discontinued the use of the branding 'Fine Sea Island' on all of our own brands, using in place of it simply the words 'Fine Sheetting' or 'Extra Fine Sheetting.' A few of our customers have, however, continued to use the brand 'Fine Sea Island' on their own private brands, and where they have asked us to make these goods for them we have hesitated to refuse to put the words 'Fine Sea Island' on the goods, because it has been a custom of such long standing. However, our mills continue to press us to discontinue this practice, and we find it is going to be necessary to do so.

"We believe you will agree with us that it is proper and right for us to quit branding goods in this way and we shall be glad to cooperate with any jobber in selecting suitable words to use in place of these words, 'Fine Sea Island.'"—Daily News Record.

Total Spindle Hours in September Show Decline.

Washington.—A slight let-up in spinning activity was recorded during September, as compared with August, according to the Census Bureau's cotton spinning report issued today. Active spindle hours during September were 8,033,002,129, a decrease of 272,118,619 as compared with the August figures. Spindles in place showed an increase, as did the number of spindles operated at some time during the month, but the average active hours

per spindle in place decreased from 217 in August to 209 in September.

Based on an activity of 25½ days, allowance being made for the observance of Labor day in some localities, for 8.74 hours per day, the average number of spindles operated during September was 34,822,373, or at 93.9 per cent of capacity on a single shift basis, compared with 34,041,029, or 92.1 per cent, of capacity in August.

Active spindle hours in cotton growing States numbered 4,337,056, 582, or 270 per spindle in place, compared with 4,399,873,166, and 274 in August; in all other States, 3,422,806,888, compared with 3,633,138,963 in August.

Active spindle hours for September by States follow: Alabama, 333,072,512; Connecticut, 275,943,565; Georgia, 716,230,316; Maine, 206,997,188; Massachusetts, 1,952,731,052; New Hampshire, 87,401,552; New Jersey, 77,432,691; New York, 226,344,551; North Carolina, 1,462,406,290; Pennsylvania, 27,844,445; Rhode Island, 482,524,928; South Carolina, 1,411,654,232; Tennessee, 107,760,513; Virginia, 145,290,306; all other States, 247,229,329.

New Link-Belt General Catalog.

The Link-Belt Company, of Chicago, Philadelphia and Indianapolis announces the completion of a new General Catalog No. 400 which embraces their entire line. It is the most complete book they have ever issued on this subject. It contains 832 pages, is cloth bound and can be obtained from any Link-Belt Branch office.

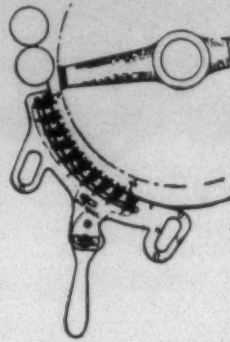
This catalog not only includes the complete Link-Belt line, but also the products of the H. W. Caldwell & Son Company plant of that Company.

The following is a brief summary of the contents covered in the catalog:

LinkBelt Chains and Wheels (220 pages); Power Transmission Machinery, Bearings, Hangers, Take-ups, Gears (machine molded or cut-tooth), Clutches, Pulleys, Sheaves; Elevator Booths, Buckets, Casings; Helicoid and other screw conveyor equipment; Gates for Conveyors; Bins, Hoppers, etc.; Steel Apron Conveyors; Belt Conveyors; Peck Carriers; Boiler Plant Equipment—Crushers, Feeders, Water Screens, Weighlarries, Skip Hoists; Coal Tipple Conveyors, Screens Eccentrics, Picking Tables, Loading Booms; Coal Washeries, Jigs, Elevators, Driers; Coal Storage, Pockets, Tramways, Towers; Locomotive Coaling Stations; Car Loaders and Unloaders, Portable Loaders, Portable Belt Conveyors; Locomotive and Crawler Type Cranes; Grab Buckets, Wood Grapples, etc.; Electric Hoists, Overhead Cranes, Telferage; Car Pullers, Friction Hoists, Power Hoes, Power Shovels, Cable Haulage; Sand and Gravel Washing Equipment, Revolving Screens, Sand Separators, etc.; Lime Handling Equipment; Foundry Conveyors, Sand Revivifiers; Elevators and Conveyors for Glass Plants, Canneries, Freight Hauling; Sugar Plantation and Refinery Machinery.

South African Cotton Goods Imports.

South African imports of American cotton goods for the first six months of 1922 were satisfactory, especially in piece goods, as the quantities of this class equal the 1921 total for the whole year. (Cable from Trade Commissioner P. J. Stevenson, Johannesburg, September 29.)



Less Waste — Cleaner Yarns

COMPETITION IS NOW STRONG, and we cannot impress upon you too keenly to adopt our ADJUSTABLE PIN GRIDS, which will enable you to manufacture stronger and cleaner yarns, with smallest percentage of waste.

Send for large list that have already adopted them.

Atherton Pin Grid Bar Company

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HAND KNOTTERS WARP TYING MACHINES
WARP DRAWING MACHINES

UNIFORM IN APPLICATION

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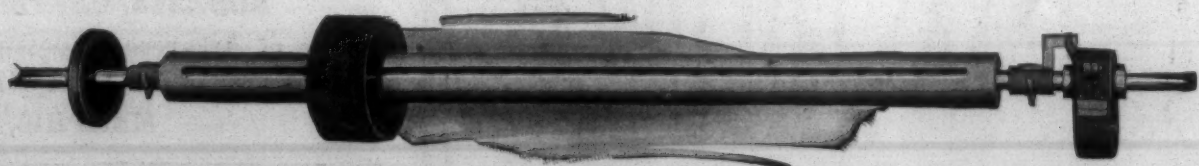
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and Oklahoma City and Hobart, Okla.**Cotton Notes****Cotton Crop Be 9,354,443 Bales.**

Arkansas860,714

Texas3,138,636

All others (estimated)250,000

Total.....9,354,443

Greenville, S. C.—The 1922 cotton crop in this section, in South Carolina and over the whole cotton belt, in fact, is going to be much shorter than government forecasts indicate, according to a statement issued by Cooper and Griffin, local cotton merchants who have made a survey of the belt through their wide-spread net work of correspondents. The crop this year will run slightly over 9,350,000 bales, according to the Cooper and Griffin estimate, which is several hundred thousand bales under the latest government forecast.

Naturally with less cotton produced over the belt the crop made by the Greenville county and South Carolina farmer, is going to bring a higher price.

Following is the estimate by states as compiled by Cooper and Griffin from figures furnished by their correspondents in every part of the belt:

	Bales
North Carolina	712,500
South Carolina	594,000
Georgia	827,916
Alabama	806,428
Mississippi	913,333
Louisiana	341,666
Oklahoma	622,916
Tennessee	286,916

Long Rise Marks the Cotton Market.

New Orleans.—A long rise marked the cotton market last week, lowest prices coming in the first two sessions while highest prices were reached on the closing session. From four points there was a rise to declines under the close of the preceding week of fifteen to twenty-vances of 117 to 142 points over the range of fluctuations being 137 to 157 points. After trading as low as 21.72, December rose to 23.22 and closed at 23.17 cents. Spot prices gained 125 points on middling, which closed at 23 cents against 18.25 on the close last week a year ago.

The main reasons for the advance were to be found in the spot department where the demand constantly broadened while offerings preceptibly lessened. A deep impression was made early in the week by messages from points in Texas stating that in some cases, the entire day's offerings of spots consisted of a single bale.

Later, Texas reports stated that both foreign and domestic spot houses had instructed their buyers

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to get cotton, regardless of the price. On the closing session no little buying was aroused by the claim that farmers' marketing bureaus were tying up from 25,000 to 30,000 bales of spots daily. All sections of the belt sent in reports that were equally as bullish as the Texas accounts and in the eastern belt it was said that cotton mills were reaching out into the territory surrounding them and ignoring middlemen and railroads, were buying up cotton and shipping it to their warehouses on their own motor trucks.

Further reports of a large business being done in cotton goods intensified the effect of spot news. The census bureau will issue its report on ginning to October 18, and the figures may have an important bearing on the net results of the week.

Cotton Crop Movement.

New Orleans.—Secretary Hester's weekly New Orleans Cotton Exchange statement, shows an increase in the movement into sight compared with the seven days ending this date last year, in round figures, of 76,000, an increase over the same time year before last of 11,000, and an increase over the same time in 1919 of 114,000.

For the twenty days of October the totals show an increase over last year of 117,000, an increase over year before last of 503,000 and an increase over same time in 1919 of 375,000.

For the eighty-one days of the season that have elapsed the aggregate is ahead of the eight-one days of last year 257,000, ahead of the same time year before last 1,313,000

and ahead of the same time in 1919 by 1,355,000.

The amount brought into sight during the past week has been 541,409 against 465,443 for the seven days ending this date last year, 390,733 year before last and 427,792 same time in 1919; and for the twenty days of October it has been 1,474,289 against 1,357,754 last year, 971,703 year before last and 1,099,697 same time in 1919.

The movement since August 1 shows receipts at all United States ports 1,796,005, against 1,885,268 last year, 1,193,499 year before last and 1,065,629 same time in 1919; overland across the Mississippi Ohio and Potomac rivers to Northern mills and Canada 170,326 against 378,163 last year, 138,133 year before last and 202,510 same time in 1919; interior stocks in excess of those held at the close of the commercial year 639,665 against 117,882 last year, 240,264 year before last and 183,836 same time in 1919; Southern mill takings, net, 809,000 against 776,571 last year, 530,538 year before last and 607,625 same time in 1919.

Northern mill takings and Canada during the past seven days show a decrease of 17,225 as compared with the corresponding period last year, and their total takings since August 1 have decreased 175,467. The total takings of American mills, North and South and Canada, thus far for the season have been 1,233,421 against 1,378,796 last year. These include 345,947 by Northern spinners against 521,414.

Foreign exports for the week have been 172,535 against 267,859 last year, making the total thus far for the season 1,039,197 against 1,469,925 last year, an increase of 430,728.



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Cotton Goods

New York.—The cotton goods markets continued strong and active during the week. Higher prices were noted on almost all lines, due to the stronger position of the mills after many of them are well sold up and to the continued demand for goods. Throughout the whole list, there are still many goods that are priced lower than the cost of replacement at this time and there is a constant tendency to secure higher prices for goods in this class.

Prices of wide sheetings are very firm in all quarters of the market and pillow tubing and other similar goods are also being firmly held. On blankets and domestics, goods wanted for prompt shipment are being marked up. Brown sheetings and bleached goods are both higher and there is the same tendency noted prints and percales. With the continued demand for goods and the high cotton markets, there seems now a clearer recognition that all lines of cotton goods are practically certain to be higher.

Reports from the larger jobbing houses indicate that business is good in wholesale hands. Price comparisons indicate that jobbing prices are about as high as they were last year. There is a steady business, although orders are not particularly large and many houses say that the margin of profit is not large.

The Fall River print cloth market was steady and active during the week and many large orders were handled at higher prices. The demand was broad and covered practically all styles of both wide and narrow goods, as well as for twills and sateens. Prices were firm and on many counts there was an advance of a quarter cent.

The cloth markets continued active during the week with prices steadily advancing on drills, sheetings, print cloths and many of the convertibles.

Print cloths sold for delivery into next year on a basis of 8 3-8c for 60x48s, 10 3-4c for 68x72s, 13 1-2c for 4-yard 80s and 7 1-4c for 27-in. 64x60s.

Sheetings brought 9c for 5-yards, 9 3-4c for 4.25s, 10 1-2c bid and declined for 4-yard 37-inch goods, 7 3-8c bid for 6.15s, with many houses asking from 1-8c to 1-4c higher for additional quantities.

Drills are in a strong position; in fact, better than for more than two years. Sales of 30-inch 3.25s were made at 11 3-8c, with mills now asking 12c; 30-inch 3-yards at 12 3-4c, with mills now asking 13c, and 37-in. 3.95s in a large way at 11 1-2c. Some mills now want 11 3-4c for additional deliveries.

Sateens continue very strong and quick delivery goods must be secured from second hands. This has led to feverish prices on many constructions where production will not catch up for two or three months. Sales of 39-inch 3.50s were made yesterday at 20 1-2c.

Trading in fine goods continues steady, with prices still in favor of the buyer when any spot goods are available.

Tire fabric contracts for delivery during the first six months of next years are reported larger than during the current year. Sakellaridis are not wanted freely. One house has had no call for them for eight months. Egyptian carded yarns are largely in process of manufacture into cloths. Prices are higher; carded peeler is now quoted 1c to 4c up. Combed Egyptians are now 1 1-2c advanced and carded Egyptians are 1-2c to 2c advanced.

Mill production of cotton duck is reported booked up to February. One large mill has withdrawn its prices and is now figuring on its orders already booked. Imminent price advances are spoken of and have materialized in forward business. Spot wide drills have brought 42 cents.

Prices were quoted as follows:
Print cloths, 28-in., 64x64s..... 7 1/2
Gray goods, 38 1-2 in., 64x64s... 9 1/2
Gray goods, 39-in., 68x72s..... 10 1/2
Gray goods, 39-in., 80x80s..... 13 1/2
Brown sheetings, 3-yard..... 13
Brown sheetings, 4-yard..... 11 1/2
Brown sheetings, So. Std..... 14
Ticking, 8-ounce 26
Denims, 2.20 19 1/2 a 20 1/2
Staple gingham 14 1/2
Dress gingham 18 a 20 1/2
Standard prints 10 1/2
Kid finished cambrics..... 9 1/2 a 10 1/2

Hosiery in Birmingham, England.

Consul Hurd, Birmingham, reports that there continues to be a steady demand for hosiery in the Birmingham district despite the widespread business depression. The most popular material for men's half hose is cashmere, though plain wool is used to a large extent. Cheap cotton socks find a considerable market among the poorer classes, as do also cotton and silk mixtures. The demand for sport hosiery is fairly active, especially for white cotton and wool and wool socks, used in tennis and cricket, and knee-length hose used by golfers, cyclists, football players, etc. Artificial silk hosiery is by far the most popular among women, and several local retailers report that their sales of this kind of hose exceeded the combined sales of all other sorts.

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The Yarn Market

Philadelphia, Pa.—The yarn markets, as a whole continued active during the week. There has been considerable improvement in the demand for knitting yarns and some large orders were placed during the latter part of the week. The buying of weaving yarns has quieted somewhat, although these yarns are still moving well. Mills on fine combed yarns are selling to the end of the year, although combed yarns have been shown as much improvement as carded yarns. There is still evidence of considerable stocks of combed yarns and these stocks are making it hard for sellers to secure higher prices. Prices on combed orders sold through the year show but little change from present quotations, although some sellers have gotten an advance of one cent beyond the first of the year.

The market for knitting yarns has again advanced since the general market improvement began. During the last few days of the week, a number of orders for 50,000 to 200,000 pounds were reported, with prices advanced from 1 to 2 cents a pound.

Southern 2-ply chain warps continue their advance. Advances range from 1-2c to for 26s to 7c in 40s; 50s remain nominal in price. A number of mills are quoting as high as 44c for 20s and 54c for 30s. A number of house have noted a falling off in inquiry during the last day of two. A few mills that six weeks ago reported a sold-up condition up to the close of the year are reported ready to accept additional business now. They are prepared for a slight increase of contract orders immediately, but further ahead are open for larger commitments. Their prices are firm on a basis of today's market.

The duck yarn situation is tight for the time being. The spot market is said to be well cleaned up. Prices quoted are up 1-2c in 8s and 10s and 2c in 16s and 20s. Mills making these yarns are largely turning them into finished ducks whose scarcity is indicated by the stronger position of single fillings, ordinarily the weakest item in the division.

Prices were quoted as follows:

Southern Two-Ply Chain Warps, Etc.		
10s	38	@
12s to 14s	39	@
2-ply 16s	43	@
2-ply 20s	42	@43
2-ply 24s	46	@
2-ply 26s	47	@
2-ply 30s	49	@51
2-ply 40s	65	@68
2-ply 50s	78	@

Southern Two-Ply Skeins.		
5s to 10s	37	@
10s to 12s	38	@
14s	39	@
16s	40	@
24s	41	@42
30s	49	@
36s	59	@
40s	64	@
40s extra	68	@
50s	75	@76
60s	88	@
Carpet—		
2, 3 and 4-ply	35	@
5-ply	35	@

Tinged Insulating Yarns.		
6s, 1-ply	34	@
8s, 2, 3 and 4-ply	35	@
10s, 1-ply and 2-ply	35½	@
20s, 2-ply	41	@
26s, 2-ply	44	@
30s, 2-ply	48	@49

Duck Yarns.		
3, 4 and 5-ply—	36½	@37
8s	37	@38
10s	42	@
16s	42	@
20s	42	@43

Southern Single Chain Warps.		
6s to 10s	36	@
12s	37½	@
14s	38	@
16s	40	@
20s	42	@
22s	42	@
24s	46	@
26s	47	@48
30s	49	@50
40s	60	@62

Southern Single Skeins.		
6s to 8s	36	@
10s	37	@
12s	37½	@
14s	38	@
16s	40	@
20s	41	@
22s	42	@
24s	43	@44
26s	45	@
30s	48	@

Southern Frame Cones.		
8s	36½	@
10s	37	@
12s	37½	@
14s	38	@
16s	39	@
18s	39½	@
20s	40	@
22s	41	@
24s	42	@
26s	43	@44
30s	46	@
30s double carded	48	@
30s tying in	48½	@

Southern Combed Peeler Skeins, Etc.		
2-ply 30s	60	@
2-ply 36s	70	@
2-ply 40s	72½	@
2-ply 50s	85	@90
2-ply 60s	1 00	@
2-ply 70s	1 10	@1 15
2-ply 80s	1 25	@1 30

Combed Peeler Cones.		
10s	49½	@
12s	50	@
14s	50½	@
16s	51	@
18s	52	@
20s	53	@
22s	54	@
24s	55	@
26s	56	@
28s	58	@
30s	62	@
32s	64	@
34s	66	@
36s	68	@
40s	72	@
50s	85	@
60s	1 00	@

Eastern Carded Peeler Thread Twist Skeins.		
20s, 2-ply	48	@
22s, 2-ply	49	@
24s, 2-ply	50	@
30s, 2-ply	56	@
36s, 2-ply	64	@
40s, 2-ply	66	@
45s, 2-ply	70	@
50s, 2-ply	78	@

Bolivian Silk Goods Market.

Consul McDonough, La Paz, reports that with the improvement in Bolivian currency the market for silk goods has also improved. The share of the United States in the silk goods trade, while not large, has increased greatly since 1914. Materials made from silk in demand are sewing thread, taffetas, crepe de chine, satins, foulards and brocades. The greater part of the silk goods imported, however, are mixed silk and cotton.

Easy Money in Georgia.

Macon, Ga. — Mills B. Lane, president of the Citizens and Southern Bank and a director of the Bibb Manufacturing Company feels that the present period of easy money is unprecedented in Georgia. Banks in Georgia, he states, are lending money in New York. At the Savannah office alone, says Mr. Lane, the bank recently lent \$3,000,000 on call in New York.

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Superintendent for mill of about 12,000 spindles and 500 looms on coarse colored cotton goods. Applicant must furnish references and where now employed. Other qualifications necessary to operate a mill of this kind under present conditions must be unquestioned. "Superintendent," care Southern Textile Bulletin.

Cotton Mill Accountant.

Wanted: Thoroughly experienced Cotton Mill Accountant and Auditor for Southern mill. Give full reference and experience in application. Address Auditor, care of Southern Textile Bulletin.

Wanted.

First-class Band Instructor who also works in the mill. References required. Address, E. G. Carson, North Charlotte, N. C.

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- 2—Saco-Pettee Drawing Frames, metallic rolls, five heads.
- 1—Cotton Bale Scales.
- 1—64 Spindle Slubber—12x6—Providence Machine Company.
- 1—56 Spindle Slubber (Providence Machine Company. This machine incomplete.
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- 1—36 Spindle Brownell Twister for very coarse work.
- 6—98 Spindle Spinning Frame—2½-in. ring, 3-in. gauge—Lowell Machine Company.
- Also Roving Cans, top rolls, bobbins, etc., for this equipment.
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- 1—60-in. Delivery head end of slasher—Suitable for use as Warp Compressor.
- 768—Knee Brakes for 4½-in. ring Howard & Bullough Twisters.
- 12—Automatic (shuttle) Change Motion Attachments for Crompton & Knowles heavy Duck Looms.

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Columbus, Ohio

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Braids Tapes Cotton Rope

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The fee for joining our employment bureau for three months is \$2.00 which will also cover the cost of carrying a small advertisement for one month.

If the applicant is a subscriber to the Southern Textile Bulletin and his subscription is paid up to the date of his joining the employment bureau the above fee is only \$1.00.

During the three months' membership we send the applicant notices of all vacancies in the position which he desires.

We do not guarantee to place every man who joins our employment bureau, but we do give them the best service of any employment bureau connected with the Southern Textile Industry.

WANT position as general manager, superintendent or assistant superintendent. High class man of long experience, and thoroughly understand all phases of cotton manufacturing. Excellent references. Address No. 3606.

WANT position as superintendent, overseer of carding or spinning. Excellent references to show ability and character. Address No. 3607.

WANT position as overseer carding and spinning. Many years' experience and am thoroughly competent to handle either process. References. Address No. 3608.

WANT position as master mechanic. Understand both steam and electric plant, and can handle large or small mill. Address No. 3609.

WANT position as superintendent or carder and spinner. Now employed, but wish larger place. Good references. Address No. 3610.

WANT position as overseer of weaving. Age 38, good habits, steady worker. Good references, and experience and qualifications. Address No. 3611.

WANT position as overseer weaving. Good weaver of long experience. Can handle wide variety of fabrics. Address No. 3612.

WANT position as overseer large cloth room. Thirteen years' experience on all kinds of white goods. Age 32, married, 13 years as overseer. Best of references. Address No. 3613.

WANT position as overseer carding. Have had 24 years' experience, textile education, 3 years on tire duck. Best of references. Address No. 3614.

WANT position as overseer carding or spinning. Excellent worker, long experience, good references. Address No. 3615.

WANT position as overseer carding or spinning, or superintendent of good yarn mill. Good references to show past record and experience. Address No. 3616.

WANT position as overseer spinning. North Carolina preferred. Am thoroughly experienced in spinning and have handled rooms in some of the best mills in North Carolina. Fine references. Address No. 3617.

WANT position as overseer of weaving. Competent, experienced man who can get real results. Good references. Address No. 3618.

WANT position as master mechanic. Long experience in both steam and electric plants. Now employed. Good references. Address No. 3619.

WANT position as superintendent of medium sized mill on white work, or carder and spinner in larger mill. Excellent references to show character and ability. Address No. 3620.

WANT position as assistant to superintendent, agent or president. Long experience as mill man, stenographer, general office man. Textile college and I. C. S. courses. References. Address No. 3621.

WANT position as superintendent or spinner; 18 years an overseer and superintendent. Present job for two years. Have run some of the best jobs in the South. Wish change of locality. Piedmont section preferred. Address No. 3622.

WANT position as superintendent or overseer of weaving, white or colored, plain or fancy work. Have handled some of the best jobs in the Carolinas and can get results. Best of references. Address No. 3623.

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WANT position as superintendent or traveling salesman. Now employed, but

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WANT position as overseer weaving in medium size mill or second hand in large mill making sheetings, prints, pajama checks. Experienced on both plain and Draper looms. Can come on short notice. References show I can deliver the goods. Address No. 3626.

WANT position as assistant superintendent of large weaving mill, or superintendent of yarn mill; would consider place as overseer spinning. Age 38, with long experience on all kinds of cotton goods and yarns. Good references. Address No. 3627.

WANT position as overseer carding, weaving or spinning. Am textile graduate of I. C. S. and have had two years in one of the best mills in the South. Young, ambitious and a hustler. Address No. 3628.

WANT position as superintendent of yarn mill, or overseer carding. Practical man of long experience and training and can get excellent results. Address No. 3629.

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WANT position as superintendent or overseer weaving. Have had long experience on both positions and have an excellent record in some of the best mills in the South. Can come on short notice. Good references. Address No. 3631.

WANT position as overseer weaving. Experienced on both plain and fancy goods, can get quantity production of excellent quality. Satisfactory references to show ability, training and character. Address No. 3632.

WANT position as superintendent. Am thoroughly trained man, of good executive ability and am capable of getting good results. Wish to correspond with mill needing high class man. Address No. 3633.

WANT position as overseer carding. Good carder, good manager of help and have had necessary experience to enable me to handle large room on efficient basis. Excellent references. Address No. 3634.

WANT position as overseer spinning. Thoroughly familiar with all classes of goods and can furnish best of references. Address No. 3635.

WANT position as overseer weaving, or would take second hand's place in large room. Familiar with all details of weaving room, experienced on wide variety of fabrics. Best of reference. Address No. 3636.

WANT position as overseer carding, or second hand in large room. Can give excellent references as to character and ability. Address No. 3638.

WANT position as overseer carding, or spinning, or both. Married man, settled, three workers in family. Now employed, but am capable of handling a larger job. Good references. Address No. 3639.

WANT position as overseer weaving. Familiar with wide variety of fabrics, good manager of help, excellent past record. Address No. 3640.

WANT position as superintendent, assistant superintendent, or designer. Over 25 years' experience in this line, can make practically any class goods made on a loom. Would be glad to correspond with mill needing expert superintendent. Excellent references. Address No. 3641.

WANT position as superintendent yarn mill or overseer carding in large mill. Good carder, excellent manager of help, long practical experience and good record as successful superintendent and overseer. Address No. 3642.

WANT position as superintendent, or carder. Now employed as overseer and giving satisfaction, but want larger mill. Long years of experience as both overseer and superintendent. Excellent references. Address No. 3643.

WANT position as superintendent. High class mill man who wants connection with mill that appreciates quality and quantity production and all-around ability to keep plant running smoothly. Best of references. Address No. 3644.

WANT position as overseer carding. Energetic, well trained mill man who thoroughly understands all phases of efficient carding. Address No. 3645.

WANT position as overseer carding. Settled man of good habits, well trained and of long practical experience. First class references. Address No. 3646.

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WANT position as superintendent in mill requiring services of thoroughly competent man, on yarn or cloth. Married, temperate, hard worker and economical, can secure results. Over 10 years as superintendent of best mills. Best of references. Address No. 3648.

WANT position as superintendent, or overseer large weave room. Long experience in both positions. Efficient, practical and can get fine results. Best of references. Address No. 3649.

WANT position as carder, spinner or both, or superintendent of 30,000 spindles. Now running 56,000-spindle spinning room. On present job for three years, and am giving satisfaction, but have excellent reason for wanting to change. References. Address No. 3651.

WANT position as carder, or would take second hand in large room. Good man who thoroughly understands card room in every particular. Address No. 3652.

WANT position as superintendent of medium sized mill, weave plant preferred, or assistant superintendent in large mill. Competent to handle either place. Good references. Address No. 3653.

WANT position as carder and spinner, or both. Long practical experience, good manager of help, excellent references. Address No. 3654.

WANT position as superintendent, carder or spinning. Now employed in first class mill, but want larger job. Excellent references. Address No. 3655.

WANT position as overseer spinning on medium numbers hosiery yarns. Can give first class references from present and past employers. Address No. 3656.

WANT position as master mechanic or electrician. Long experience in large mill shops, can handle either steam or electric plant. Good references. Address No. 3657.

WANT position as superintendent of medium size mill, or as assistant superintendent or weaver in large mill, either plain or fancy work. Good references as to character and ability. Address No. 3658.

WANT position as superintendent or overseer weaving. Experienced on plain and fancy goods, know how to get quality production at low cost. Good references. Address No. 3659.

WANT position as assistant superintendent or overseer weaving. Now employed as weaver in room having 784 looms, with dobby heads on 448 of them. Age 35, long experience as loom fixer, second hand and assistant superintendent. Familiar with plain and drill goods, pajama checks, shirting, skirting, sateen, gabardine, marquisetts and other goods woven on plain and dobby looms. I. C. S. graduate. Best of references. Address No. 3660.

WANT position as superintendent or overseer spinning. Good man of long experience who can successfully handle your mill or spinning room. Address No. 3661.

WANT position as superintendent. Long experience as such in number of large mills in South and can give good references showing ability and character. Address No. 3662.

WANT position as carder or spinner on white work only. Long experience and can get results. Address No. 3663.

WANT position as superintendent, carder or spinner. Have had long experience as both superintendent and overseer and can show excellent record and qualifications. Fine references. Address No. 3664.

WANT position as overseer weaving. Experienced on wide variety of fabrics and am first class weaver in every respect. Good references. Address No. 3665.

WANT position as carder or spinner, or both. Now giving satisfaction in good mill, but want larger job. Address No. 3666.

WANTED—Clerical position by married man, four years' mill work. Competent for paymaster or buyer of supplies. Thoroughly familiar with general office work. Address 3667.

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WANT position as superintendent. Have successfully handled during past six years one of the best mills in the South. Have excellent reasons for making a change. Wish to correspond with mill needing high class man, who is thoroughly competent to take entire charge of mill. Address No. 3669.

WANT position as card room overseer or master mechanic, or both in small mill. Can furnish excellent references as to character and ability. Address No. 3670.

WANT position as superintendent. Long experience as superintendent and am capable, practical man who has always gotten results. Good references to show excellent past record. Address No. 3671.

WANT position as roller coverer. Long experience in this work enables me to take charge of your shop and do your work efficiently. Fine references. Address No. 3672.

WANT position as overseer weaving. Now have night job, but wish day run. Twenty-six years experience as weaver, 11 years as overseer. Can handle help well. Prefer job with Draper looms. Good references. Address No. 3673.

WANT position as superintendent or would take carding and spinning. Textile college graduate, long practical experience in good mills. Excellent references. Address No. 3674.

WANT position, any size mill, as overseer carding and spinning. Colored or white work. Several years' experience as overhauler of carding, spinning and weaving. A-1 references. Address No. 3675.

WANT position as superintendent or general manager. Many years' experience in both positions. Am thoroughly qualified to handle mill on efficient basis. Best of references. Address No. 3676.

WANT position as superintendent of small yarn mill or weaving plant, or overseer weaving. Married, age 39. Good references. Address No. 3677.

WANT position as overseer cloth room. Have had 15 years' experience as overseer in South Carolina and can furnish best of references. Can come on short notice. Address No. 3678.

WANT position as superintendent or overseer spinning. Long experience on both jobs and can show excellent record. Can come on short notice. Address No. 3679.

WANT position as superintendent of yarn mill, or would take overseer carding. Have been overseer for long term of years and thoroughly understand my business. Good references. Address No. 3680.

WANT position as overseer weaving. Experienced on fancy colored goods, sheetings, drills, can handle either Draper or Crompton and Knowles looms. Age 47, have family. Best of references. Have been in weave room 39 years, 18 years as overseer. Address No. 3781.

WANT position as overseer carding. Hard working, competent man, who has had necessary experience to handle card room on efficient basis. References. Address No. 3782.

WANT position as overseer weaving. Plain or fancy work, familiar with all Southern made goods. Fine references as to character and ability. Address No. 3683.

WANT position as overseer weaving. Plain goods preferred. Capable, experienced man with excellent record. Good references. Address No. 3684.

WANT position as superintendent, weaver or spinner. Long practical experience in number of good mills. Now employed, but can change on short notice. Best of references. Address No. 3685.

WANT position as carder, spinner, or both. Can give satisfactory references showing Dependable man of settled habits who ability to handle job. Address No. 3686.

WANT position as carder or spinner, or both. Age 48, married, 20 years' experience as carder and spinner on both white and colored work. Now employed as carder. Good manager of help and have fine references. Address No. 3687.

WANT position as superintendent. Practical mill man of long experience and can show results on job. Good habits and hard worker. Best of references. Address No. 3688.

WANT position as overseer carding, or second hand in large room. I. C. S. graduate, good character and man of settled habits. Steady and experienced worker. Address No. 3689.

WANT position as superintendent or carder and spinner. Am thorough and practical man and can handle anything in the mill. Have handled some of best mills in South. Now employed, but want better equipped plant. Address No. 3690.

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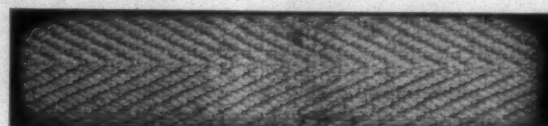
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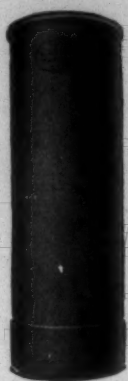
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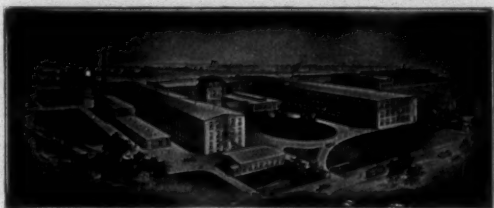
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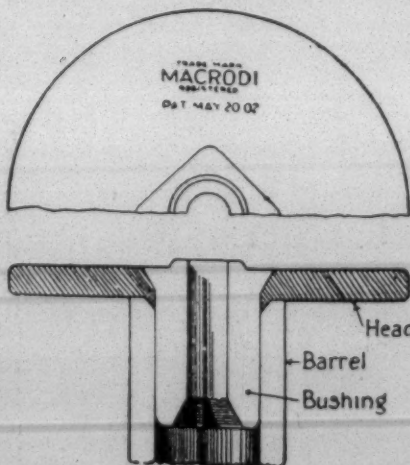
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